

THRIVE FOOD PANTRY



**FIGHTING FOOD INSECURITY FOR
INDIVIDUALS LIVING WITH
DEVELOPMENTAL DISABILITIES IN
WORCESTER, MA**

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THRIVE
SUPPORT & ADVOCACY



WPI

Thrive Food Pantry

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/Arts.

by

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Report Submitted to:

Chief Operating Officer Stacey Forrest and President Sean Rose

Thrive Support & Advocacy

Professor Laura Roberts

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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>

THRIVE FOOD PANTRY

Sponsor: Thrive Support
& Advocacy

Advisor: Laura Roberts



ABSTRACT

Food insecurity is a persistent issue in the United States and the COVID-19 pandemic has only increased the severity of this issue. Our project collaborated with Thrive Support & Advocacy in Worcester, MA to develop a food pantry for their clients with disabilities. We collected demographical data on the population while assessing their needs, connected with nearby food pantries to better understand effective operating procedures, developed precise space and staffing schedules, blueprints, and other deliverables while considering the sponsor's available space and budget, and created partnerships with campuses, markets, and other organizations. We helped establish the Thrive Food Pantry's long-term plans to effectively assist individuals living with disabilities in Worcester.

Keywords: food insecurity, disabilities, nutrition, autism spectrum disorders, inclusion, dietary sensitivity, allergen-free diet, community program, food pantry

Acknowledgements

Our Interactive Qualifying Project (IQP) team would like to extend a special thank you to our project advisor Laura Roberts, for her ever-present support, constructive criticism, and project expertise throughout our IQP. We would also like to thank Dr. Curt Davis for all his support during our project's proposal writing and submission, and our research librarian, Paige Neumann, for all her assistance and knowledge throughout our IQP's proposal, research, and final report drafting stages.

Additionally, we would like to thank our sponsor, Thrive Support & Advocacy, specifically the Chief Operating Officer Stacey Forrest and President Sean Rose. We thank them for assisting individuals living with autism spectrum disorders, intellectual disabilities, and developmental disabilities. We also thank them for their knowledge, enthusiasm, and willingness to assist our project however they could. Thanks to their foresight, experience, connections, and understanding of community projects, we were able to develop sustainable plans for their food pantry and create precise deliverables.

Lastly, we would like to thank the large number of food pantries, food distributors, large suppliers, researchers, organizations, state agencies, state and town officials, businesses, and communities who contributed to our project through interviews and allowing us to conduct visual resource assessments at their sites. Their valuable insight and willingness to aid in our research helped us to understand Worcester's emergency food system and develop complete findings and recommendations.

Meet The Team & Authorship



Hello! My name is Lydia Ellen Tonani, and I am a dual major in Mechanical Engineering and Environmental Engineering at WPI in the Class of 2023. I live in Holliston, MA. During the fourteen weeks that I worked on this project, I learned a lot about the emergency food system and how it operates in Worcester, MA. However, the topics I wrote and researched the most during our IQP are our project audience's nutritional and accessibility needs as well as the effective operating procedures for food pantries. I am truly grateful for everything I have learned throughout our project and for having the opportunity to use my knowledge and experience to improve my community's quality of life.

Hello there! My name is Rachel Feldman, and I am a major in Electrical & Computer Engineering at WPI in the Class of 2023. I am from Chicago, IL. During the fourteen weeks, I learned how to measure and design a site to not only be ADA compliant, but also to be within our sponsor's budget.

I also reached out to local food pantries about their operating procedures and supermarkets about donations. It was fun to become more involved in this community. I hope to continue to volunteer with Thrive Support and Advocacy.



Hello! My name is Mia Long, and I am majoring in Biomedical Engineering at WPI in the Class of 2023. I live in Woburn, MA. During the fourteen weeks that I worked on this project, I have learned a lot about the severity of food insecurity in Worcester, MA. While researching, I learned about the purpose and importance of sensory rooms to individuals living with developmental disabilities, like our project audience. I designed the final report and presentation for this project. It was an amazing experience to be able to apply the knowledge I learned in the preparatory course for this project. I hope to volunteer with Thrive Support & Advocacy in the future to further assist this community.



Executive Summary

Introduction

Food insecurity is defined as the “lack of consistent access to enough food for an active, healthy life” (Hunger and Health, n.d., para. 2). It is one of the most persistent issues in the United States, and in 2019, the United States Department of Agriculture (USDA) found that approximately 10.5% of American households were food insecure during a portion of the year (Coleman-Jensen et al., 2020, p. 4). The ongoing COVID-19 pandemic has only exacerbated the already profound hunger crisis affecting the United States, increasing the population’s food insecurity rates to 15.6% (Feeding America, 2020, p. 2). Considering the pandemic’s lasting impacts on the economy and families, there is a continued need for food donations and the work of charitable organizations to support those experiencing food insecurity in the United States.

Despite the presence of firmly established emergency food systems across the United States, including food banks, food pantries, and soup kitchens that move food from donors to those in need (Figures 1 and 2), food insecurity still affects people disproportionately depending on their social groups. One example of a group that is affected highly disproportionately is our project’s audience: individuals living with developmental disabilities (DD), intellectual disabilities (ID), and autism spectrum disorders (ASD) in Worcester, MA 01605. Due to the nature of the challenges faced by our audience, food insecurity persists through numerous mechanisms, such as unstable employment that contributes to an evident disparity in employment opportunities that individuals living with mental disabilities face (Heflin et al., 2019, p. 221). These circumstances can significantly worsen the population’s quality of life and any underlying medical conditions.

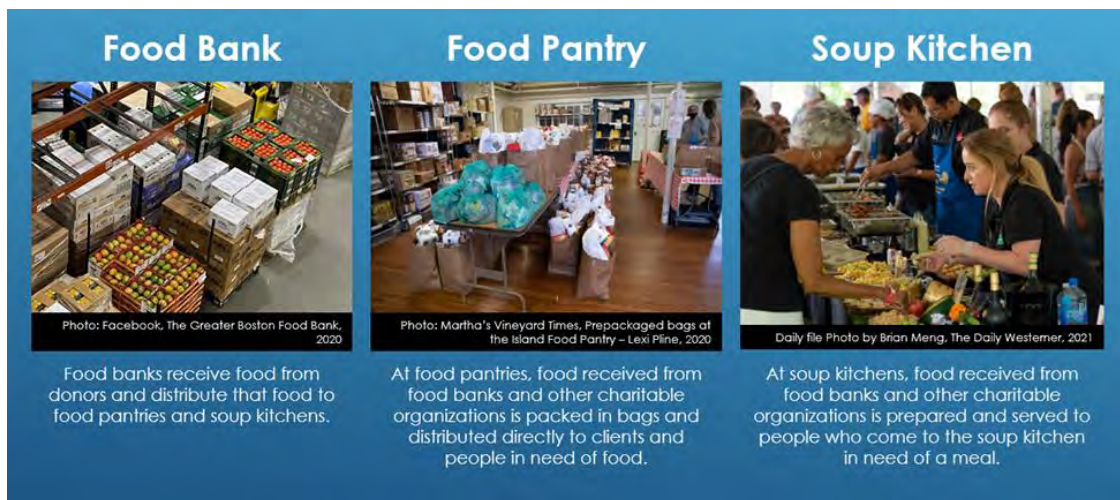


Figure 1. The Emergency Food System’s Components



Figure 2. The Food Journey

Executive Summary

To better assist individuals who live with mental disabilities, specialized organizations exist to accommodate their audience's specific needs. A remarkable example of these institutions is our project's sponsor: Thrive Support & Advocacy (Thrive). Thrive is a non-profit organization created during the 1970s to "empower youth and adults with developmental disabilities and their families to lead rich, active, and self-directed lives" (Thrive Support & Advocacy, n.d.-c, para. 1). The institution has a contractual partnership with the Commonwealth of Massachusetts (Thrive Support & Advocacy, n.d.-b, para. 4) to assist their clients through volunteerism, educational opportunities, and events to create an inclusive environment for the ASD, ID, and DD population. Although Thrive's services are centered in and near the city of Marlborough, MA, the institution also has an office in Worcester. Our sponsor intends to expand their program to the city through the creation of a sensory room, club area, and food pantry in a space adjacent to their office.

Methodology

The goal of this project was to develop a long-term plan for a Thrive Food Pantry in Worcester, MA 01605, that will assist the ASD, ID, DD population in the region and fight food insecurity in Worcester. To achieve this goal, our project focused on four primary objectives:

1. utilizing demographical data on the population that the project is assisting to assess their nutritional and accessibility needs,
2. connecting with nearby food pantries to better understand effective operating procedures for a food pantry,
3. developing precise space plans, staffing schedules, blueprints, and other deliverables for the food pantry while considering the sponsor's available space and budget, and
4. creating partnerships with campuses, markets, and other organizations for the food pantry to continue functioning after the project's completion.

We used three research methods to achieve our objectives: literature reviews, interviews, and visual resource assessments. To accomplish our first objective, we reviewed specialized literature and conducted interviews with Thrive's employees to thoroughly assess the clients' nutritional and accessibility needs. To complete our second objective, we interviewed food pantry representatives and employees from the Southern Worcester Neighborhood Center, Friendly House, and the Boys and Girls Club of Worcester to better understand effective operating procedures for food pantries. To achieve our third objective, we conducted a visual resource assessment of the Thrive Food Pantry's site, used the data we collected to accomplish our first and second objectives and developed space plans, blueprints, and budget spreadsheets using programs such as Microsoft Excel, Microsoft Word, and Autodesk's Revit. Lastly, to accomplish our project's fourth objective, we conducted interviews with food pantries, food distributors, grocery stores, and markets such as Rachel's Table, the Worcester County Food Bank, Friendly House, Chartwell, the Worcester Regional Food Hub, Shaw's, BJ's, Price Rite, Bahnan's, Wegman's and Price Chopper. We also interviewed WPI staff members and used data from objectives 1 and 2 to establish potential volunteer and funding partnerships for the Thrive Food Pantry. Once we finished collecting our data for objective 4, we developed three Excel spreadsheets discussing food sources, volunteer sources, and funding sources for the Thrive Food Pantry.

Executive Summary

Findings

Once we accomplished our objectives and developed our deliverables, we identified six findings that are indispensable for all food pantries' long-term, sustainable plans. The following section encompasses our research's findings:

Findings about the Clients' Nutritional and Accessibility Needs:

1. The two nutritional and accessibility needs that food pantries should address through their assortment are multicultural cuisines and allergen-free diets.

One of our sponsor's primary concerns is to allow their clients to have access to their ethnicities' traditional ingredients. This concern led us to investigate and find that, according to the U.S. Census Bureau, our target demographic's ethnicities (Figure 3) are predominantly White Alone (54%) (2000f), Hispanic or Latino (32%) (2000c), and Black or African American Alone (7%) (2000b). We also found that food allergens are responsible for 30 to 40% of anaphylaxis cases in all age groups in the United States and 70 to 80% of the anaphylaxis cases in children in the United States (Branum & Lukacs, 2009; Clark et al., 2011; Decker et al., 2008; F. Huang et al., 2012; Lin et al., 2008; Rudders et al., 2010). We also found that the eight most prevalent allergenic foods are eggs, milk, wheat, peanuts, tree nuts, shellfish, soybeans, and fish. These eight food categories are responsible for approximately 90% of all food allergies in the United States (University of Nebraska-Lincoln, n.d., para. 1).

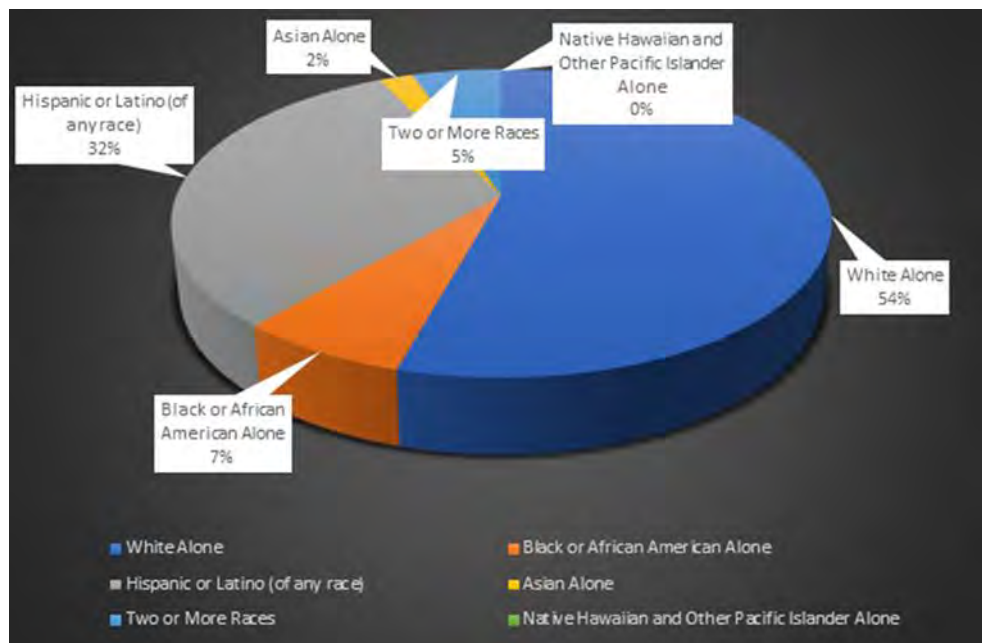


Figure 3. Population by Mental Disabilities and Ethnicity

Source: U.S. Census Bureau, 2000 Decennial Survey

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Findings about Food Pantry Staffing:

2. Food pantries require a dedicated paid staff and 4-6 consistent volunteers.

All the food pantries and food distributors that we interviewed had at least one person responsible for reaching out to and receiving phone calls and emails from large suppliers, food banks, and other organizations willing to donate food. This behavior is indispensable for food pantries because it maintains the establishment's food supply.

We also noticed that there usually were 1-2 volunteers dedicated to preparing the food boxes that the food pantry clients would take home, while the other volunteers maintained and monitored their establishment. This operating procedure benefits food pantries because it considers the location's space and needs, but these efforts can be adjusted according to the food pantry's clients.

During our research, we noticed that there were food pantry employees that picked up food that could not be delivered directly to their establishment because of the distance between the two organizations. This approach benefits food pantries because the institutions can continue receiving food donations even when the food provider cannot deliver the food directly. Our sponsor also wants to deliver food to individuals within the 01605 zip code that cannot go to the Thrive Food Pantry by themselves due to health conditions or other reasons.

Findings about Partnerships for Food Pantries:

3. Food pantries should apply for funds on a regular basis.

Our interviewees recommended food pantry employees reach out to their regional food bank, the USDA, and other non-profit community foundations as potential sources for our food pantry's funding. Each of the organizations offers different funding categories such as activation funds and operation funds.

4. Food pantries should connect with local universities, fraternities, sororities, and other charitable organizations to recruit volunteers.

During our interviews with WPI faculty members, we found that universities, fraternities, and sororities are often looking for volunteering, fundraising, and food donation opportunities for students. These partnerships can benefit food pantries because they grant volunteers, food, and funding for local food pantries to continue assisting their target audience.

5. Prepare a letterhead before connecting with potential food suppliers.

During our interviews with grocery stores and large suppliers, we found that most food suppliers require letterheads when requesting food donations if they are commercial establishments. These letterheads must include the food pantry's tax-exempt number, mission, and information about their specific food donation request.

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6. Food pantries should connect with local universities, fraternities, sororities, and other charitable organizations to obtain food donations.

Even though we were not able to receive many responses from these organizations' representatives during our research because we worked during the summer, we conducted a meeting with our Dean of Students, and he recommended food pantries to contact local universities' dining services when the school year returns and there is an increase in food surplus at the educational institutions. We also suggest food pantries to reach out to fraternities and sororities because they conduct charity events and philanthropic donations on a regular basis.

Findings about Storage and Worktop Materials for Food Pantries:

7. Stainless steel shelving and refrigerators are ideal for storage within food pantries.

All the food pantries we interviewed used or recommended that we use stainless steel as our primary shelving material. The interviewees also highlighted that double-door, stainless-steel refrigerators are ideal for food pantries because of their cleanliness and spaciousness (Figure 4). Even though stainless-steel shelving is one of the most expensive storage options, it is more hygienic, hypoallergenic, and has a greater useful life when compared to its alternatives (Baden-Powell, 2005, p. 144).

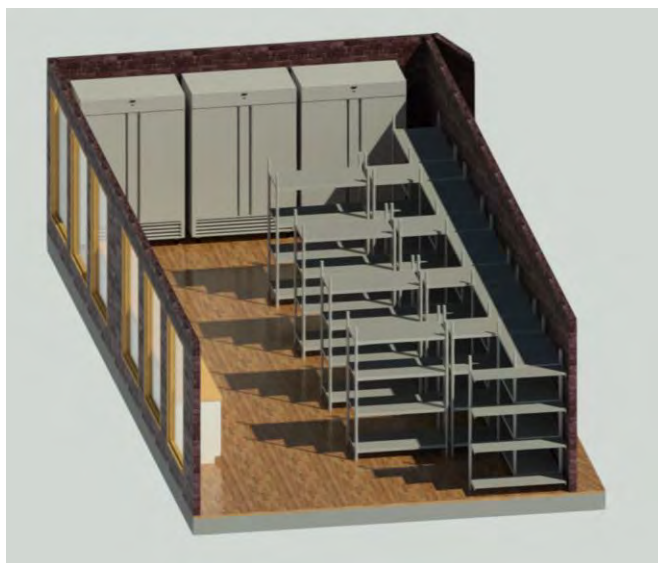


Figure 4. Storage Room's Internal Layout

Findings about Effective Operating Hours for Food Pantries:

8. Food pantries should have evening and weekend hours to better assist their clients.

Our interviewees and sponsor expressed the need for evening and weekend hours to accommodate their clients' work and school schedules. This approach assists food pantries because it makes the services more accessible to their target audience.

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Findings about Sensory Rooms:

9. A sensory room is a place for someone to calm down, relax and exercise their senses using specialized sensory items and equipment.

One unique addition that the Thrive Food Pantry will have that a typical food pantry does not have is a sensory room. Gwen, a writer for Meraki Lane, defines a sensory room as “a dedicated space in which the sensory stimuli an individual experiences can be increased or decreased depending on her needs. Using a variety of sensory room equipment, therapists and caregivers can help a sensory sensitive child explore different sights, sounds, tastes, textures, and forms of movement in a safe environment” (Meraki Lane, n.d., para. 5). The sensory room will play an important role in serving as a place to relax, stay calm, and feel safe outside of the naturally noisy environment the food pantry and club activities area will produce.

10. There are three main components to a sensory room: soundproofing, items and equipment contained within the sensory room, and well-trained staff and caregivers assisting with activities.

Our research and the site visit and interview we conducted with a staff member at Thrive’s Marlborough location revealed that there are three main components of a sensory room. One main component is ensuring that a sensory room stays capable of being a calm and safe place with a quiet atmosphere, which relies on it having some sort of soundproof divisions from the environment outside (Figure 5). Another component is about what a sensory room consists of in terms of equipment, activities, and other sensory items such as toys. And lastly, one of the most important parts is having staff with the knowledge and training that allows the purpose of the sensory room to be successfully fulfilled.

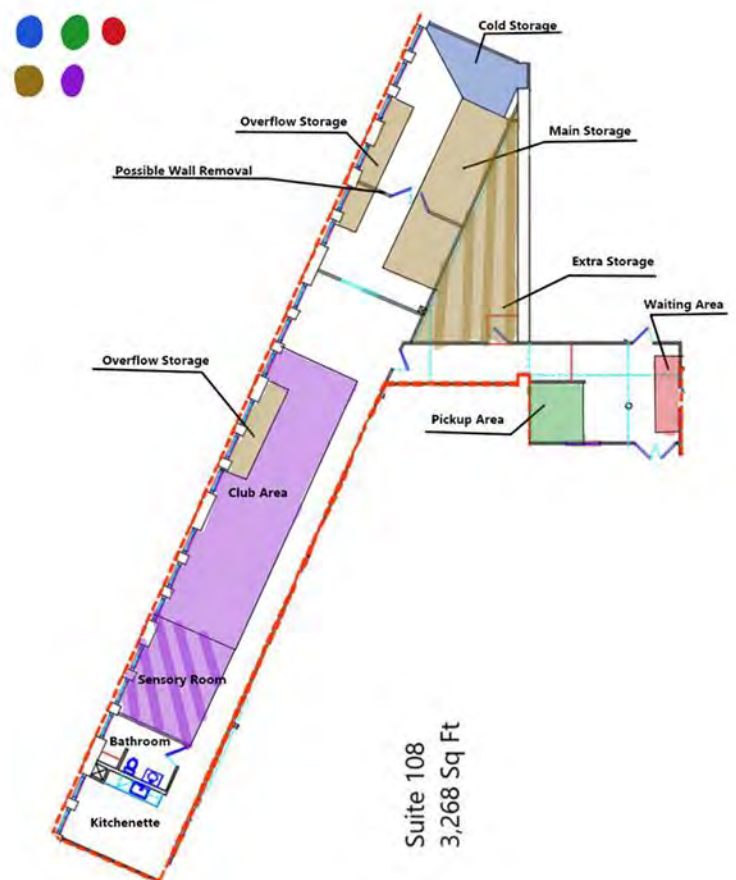


Figure 5. Site Layout for the Food Pantry, Club Area, and Sensory Room

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Recommendations

After conducting five interviews with Thrive’s employees, three interviews with food pantries, two interviews with WPI faculty members, one interview with a food insecurity researcher, two visual resource assessments at food pantries, and seventeen interviews with food distributors and large suppliers, we compiled a set of recommendations for the Thrive Food Pantry to be a more sustainable and inclusive environment. The following section outlines our project’s recommendations for Thrive according to the food pantry components they address:

Nutritional and Accessibility Recommendations:

1. Offer food safety training for volunteers and employees working at the Thrive Food Pantry.
2. Use user-friendly signage to allow Thrive’s clients to better orient themselves within the food pantry.
3. Prepare food boxes with ingredients for balanced meals before and during the Thrive Food Pantry’s business hours.
4. Acquire a set of cookbooks that address multicultural cuisines and allergen-free meals to assist clients.

Partnership Recommendations:

5. Contact WPI’s Student Activities Faculty and Community Services organizers.
6. Consider your audience’s linguistic and accessibility needs when advertising your need for volunteers.
7. Apply for grants through the Greater Worcester Community Foundation, United Way of Central Massachusetts, USDA, and the Worcester County Food Bank.
8. Connect with Shaw’s, Price Rite, Bahnan’s, Plaza Supermarkets weekly for food donations.
9. Partner with Friendly House, the Worcester Regional Food Hub, and Rachel’s Table to receive food surpluses from them.
10. Connect with the Worcester County Food Bank to obtain a consistent food supply once the Thrive Food Pantry opens.

Site Layout Recommendations:

11. Consider using a space that is fully ADA compliant.
12. Store the food and site equipment using our floor plan’s calculated dimensions to increase the site’s accessibility.

Club Area and Sensory Room Item Recommendations:

13. Develop the club area and sensory room’s activities based on your audience’s preferences and responses to previous programs.
 14. Seek item donations from the Worcester community.
-

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Conclusion

We hope that our project's research and recommendations can help the Thrive Food Pantry effectively fight food insecurity in Worcester and assist the ASD, ID, and DD population in the region. We believe that we have the responsibility to help our fellow Worcester residents live fulfilling lives in a more equitable and inclusive environment. Worcester's community can become a state-wide example of how an organized emergency food system can improve its region's food security and equity to allow its residents to not only survive but also be able to thrive.

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Chapter 1: Population Living with Disabilities Faces Higher Rates of Food Insecurity

Food insecurity is defined as the “lack of consistent access to enough food for an active, healthy life” (Hunger and Health, n.d., para. 2). It is one of the most persistent issues in the United States, and in 2019, the United States Department of Agriculture (USDA) found that approximately 10.5% of American households were food insecure during a portion of the year (Coleman-Jensen et al., 2020, p. 4). The ongoing COVID-19 pandemic has only exacerbated the already profound hunger crisis affecting the United States. The Washington Post journalist, Siobhan O’Grady (2021), wrote that “[f]or much of the world, the legacy of the pandemic will be impossible to untangle from the stark material inequities that worsened it — and that it exacerbated. Among the most dangerous of these: a mounting hunger crisis, set to grow even direr in 2021” (para. 2). O’Grady’s observations were confirmed by statistical information that revealed that 15.6% of the American population had experienced food insecurity in 2020 (Feeding America, 2020, p. 2), which is a 5.1% increase from the data collected in 2019 (Coleman-Jensen et al., 2020, p. 7). Massachusetts had a 59% increase in food insecurity during the COVID-19 pandemic, making it the U.S. state with the greatest food insecurity increase during the worldwide health crisis (Feeding America, 2020, p. 3). Since many individuals living with food insecurity cannot maintain a healthy diet, they often suffer adverse health impacts such as adiposity – a health condition in which the patient is severely overweight – (Myers et al., 2019, p. 1), diabetes, and hypertension (Gundersen & Ziliak, 2015, p. 5). Considering the pandemic’s lasting impacts on the economy and families, there is a continued need for food donations and the work of charitable organizations to support those experiencing food insecurity in the United States.

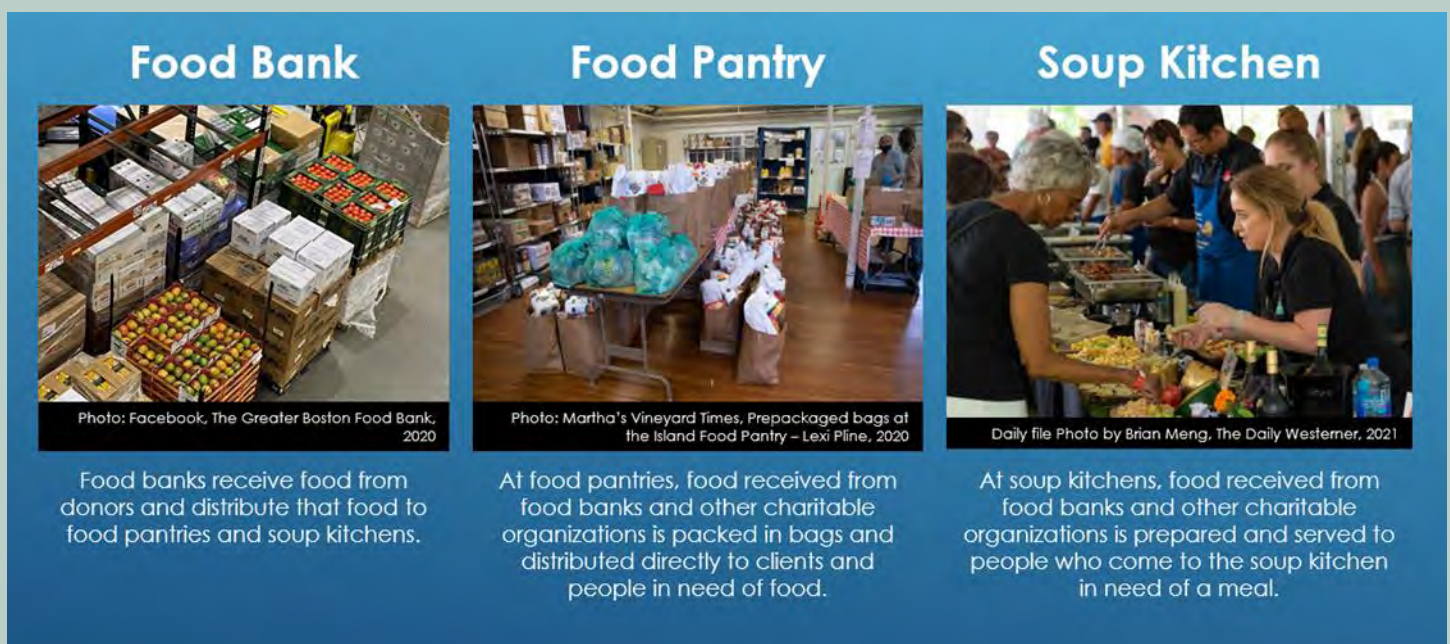


Figure 1. The Emergency Food System’s Components



Figure 2. The Food Journey

Despite the presence of firmly established emergency food systems across the United States, including food banks, food pantries, and soup kitchens that move food from donors to those in need (Figures 1 and 2), food insecurity still affects people disproportionately depending on their social groups. One example of a group that is affected highly disproportionately is the project's target demographic: individuals living with developmental disabilities (DD), intellectual disabilities (ID), and autism spectrum disorders (ASD) in Worcester, MA 01605.

According to the American Association on Intellectual and Developmental Disabilities (n.d.) (AAIDD), intellectual disabilities are "characterized by significant limitations in both intellectual functioning and in adaptive behavior, which covers many everyday social and practical skills. This disability originates before the age of 22" (para. 1). In contrast, developmental disabilities occur when there is "significant limitation in at least three areas of functioning" (Havercamp & Krahn, n.d., p. 12). Thus, even though an intellectual disability can often be treated as a developmental disability, individuals can have an intellectual disability according to the AAIDD and not meet the criteria for the developmental disability classification (Havercamp & Krahn, n.d., p. 12). Kerub et al. (2018) define ASD as "a group of neurodevelopmental disorders characterized by a combination of difficulties towards social communication a tendency towards repetitive behavior" (p. 580). Although ASD, ID, and DD manifest themselves in different ways within our project's audience, these disabilities are categorized together as mental disabilities when governmental agencies and research institutes are collecting demographical data through surveys. We used this information to find the studies that applied specifically to our project's audience in Worcester, MA 01605.

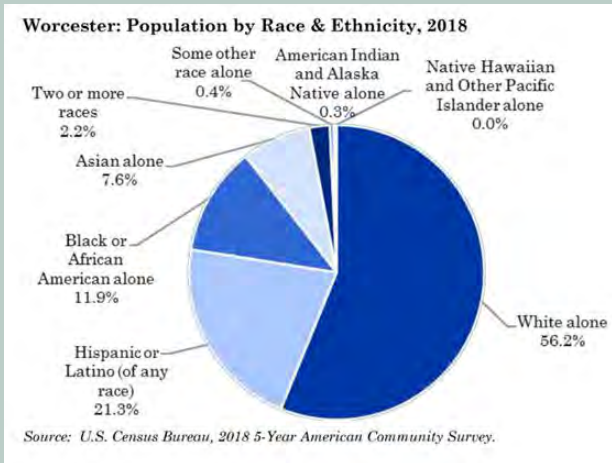


Figure 3. Demographical Data about the Worcester Population's Race and Ethnicity (Worcester Regional Research Bureau, 2020, p. 28)

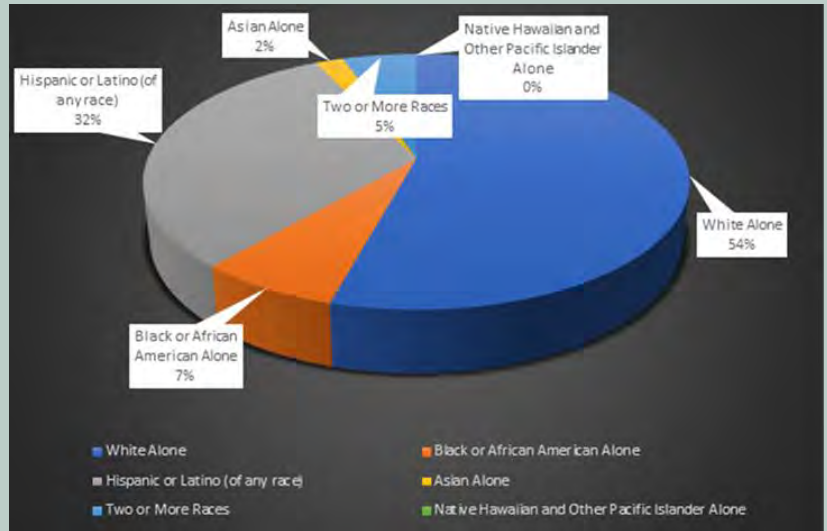


Figure 4. Population by Mental Disabilities and Ethnicity

According to the U.S. Census Bureau, our target demographic's ethnicities (Figure 4) are predominantly White Alone (54%) (2000f), Hispanic or Latino (32%) (2000c), and Black or African American Alone (7%) (2000b). This information aligns with the ethnic profile of Worcester's residents (Figure 3) (Worcester Almanac, 2020, p. 28) and the countries of origin of Worcester's multicultural inhabitants, such as Ghana, Dominican Republic, and Brazil (Figure 5) (Worcester Almanac, 2020, p. 32). Our preliminary research also emphasized that a certain percentage of our target demographic may be undocumented, since more than 20,000 Worcester residents are foreign-born and are not considered U.S. citizens (Figure 6) (Worcester Almanac, 2020, p. 32).

Worcester: Number of Residents from the Top 10 Countries of Origin, 2011 and 2018			
	2011		2018
Vietnam	3,506	Vietnam	4,215
Brazil	3,461	Ghana	3,398
Ghana	3,358	Dominican Republic	2,890
Dominican Republic	2,705	Albania	2,498
Albania	2,115	Brazil	2,079
El Salvador	1,724	China, excluding Hong Kong and Taiwan	1,733
China, excluding Taiwan and Hong Kong	1,341	Iraq	1,388
Poland	1,137	India	1,287
Kenya	905	Kenya	1,264
India	694	El Salvador	1,200
Total	20,946	Total	21,952

Source: U.S. Census Bureau, 2018 5-Year American Community Survey.

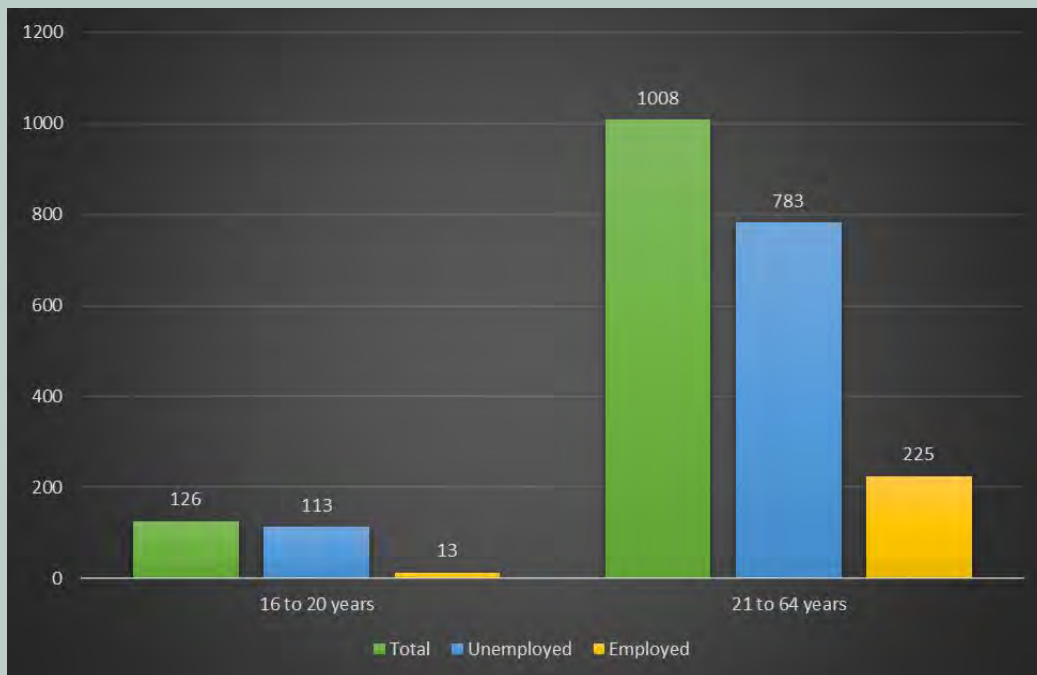
Figure 5. Number of Worcester Residents from the Top 10 Countries of Origin in 2011 and 2018 (Worcester Regional Research Bureau, 2020, p. 32)

Worcester: Foreign Born Residents, 2018		
Total Foreign Born	Foreign Born Naturalized Citizen	Foreign Born Not US Citizen
39,416	19,393	20,023

Source: U.S. Census Bureau, 2018 5-Year American Community Survey.

Figure 6. Foreign Born Worcester Residents in 2018 (Worcester Regional Research Bureau, 2020, p. 32)

Due to the nature of the challenges faced by the ASD, ID, and DD population, food insecurity afflicts our target audience through numerous mechanisms. Heflin et al. (2019) found that the connection between food insecurity and living with disabilities is “consistent across measures of sensory limitations, physical limitations, and emotional, cognitive and mental health issues” (p. 221). The persistence of food insecurity among our project's target demographic is associated with obstacles such as unstable employment that contributes to an evident disparity in employment opportunities that individuals living with mental disabilities face (Figure 7), mobility limitations, work-limiting disabilities, functional/cognitive limitations, and trouble seeing or hearing (Heflin et al., 2019, p. 221). These circumstances can significantly worsen our audience’s quality of life and any underlying medical conditions or limitations that may afflict individuals living with a disability in the United States. In light of the previous information, it is clear that modifications must be made to effectively address the ASD, ID, and DD population’s nutritional and accessibility needs.



Source: U.S. Census Bureau, 2000 Decennial Survey

Figure 7. Population by Mental Disability and Employment Status

To better assist individuals who live with mental disabilities, specialized organizations have been created to accommodate their target population’s specific needs. A remarkable example of these institutions is our project’s sponsor: Thrive Support & Advocacy (Thrive). Thrive is a non-profit organization created during the 1970s to “empower youth and adults with developmental disabilities and their families to lead rich, active, and self-directed lives” (Thrive Support & Advocacy, n.d.-c, para. 1). The non-profit institution has a contractual partnership with the Commonwealth of Massachusetts (Thrive Support & Advocacy, n.d.-b, para. 4) to assist their clients through volunteerism, clubs, after school programs, educational opportunities, and other social and recreational events to create an inclusive environment for the ASD, ID, and DD population. Although Thrive’s services are centered chiefly in and near the city of Marlborough, MA, the institution also has an office in Worcester. Our sponsor intends to expand their program’s reach to the city through the creation of a sensory room, club area, and food pantry in a space adjacent to their office.

Thrive's Worcester Office will have resources, community programs, recreational events, and nutritional and accessibility services tailored to the needs of the ASD, ID, and DD population in Worcester, MA. A sample calendar with the daily social and recreational events available for Thrive's is available in Figure 8 (Thrive Support & Advocacy, n.d.-a). Aiming to fight food insecurity in Worcester and assist the ASD, ID, and DD population in the area, our project aims to develop long-term sustainable plans for a Thrive Food Pantry in Worcester, MA 01605.



June 2021						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 Healthy Food Choices Adult Ladies Group 25+ Among Us 25+ TASC	2 Karaoke & Trivia Small Group Hangout Ages 10-25	3 Spanish for Beginners Yoga Anime Age 25+ TASC Martial Arts Zumba	4 DJ Krista's Dance Party 25+ TASC Virtual ASD Men's Group Ages 15-25	5 Minecraft Gaming Group Age 25+
6 Sexuality, Relationships, & Boundaries Age 18+ Dungeons & Dragons Age 25+	7 TASC Virtual Ladies Group Age 15-25 LEAD In-Person ASD Men's Group Age 15-25	8 Healthy Food Choices Virtual Self-Advocates Adult Ladies Group 25+ Among Us 25+ TASC	9 Adult Men Group Ages 25+ Karaoke & Trivia Age 25+ Sm. Grp. Hangout Ages 10-25 Coffee & Conv. Workshop	10 Spanish for Beginners Yoga Anime Age 25+ TASC Martial Arts Zumba	11 TASC Virtual ASD Men's Group Age 15-25	12 Boundless Adventures
13 Sexuality, Relationships, & Boundaries Age 18+ Dungeons & Dragons Age 25+	14 TASC Virtual Ladies Group Age 15-25 In-Person ASD Men's Group Age 15-25	15 Adult Ladies Group 25+ Among Us 25+ TASC	16 Karaoke & Trivia Age 25+ Small Group Hangout Ages 10-25 Thriving for Knowledge Workshop	17 Yoga Anime Age 25+ LGBTQI Support Group TASC Martial Arts Zumba	18 DJ Krista's Dance Party 25+ TASC Virtual ASD Men's Group Ages 15-25	19 Minecraft Gaming Group Age 25+
20 Sexuality, Relationships, & Boundaries Age 18+ Dungeons & Dragons Age 25+	21 TASC Virtual Ladies Group Age 15-25 In-Person ASD Men's Group Age 15-25	22 Adult Ladies Group 25+ Among Us 25+ TASC	23 Adult Men Group Ages 25+ Karaoke & Trivia Age 25+ Small Group Hangout Ages 10-25	24 Yoga Anime Age 25+ TASC Martial Arts Zumba	25 TASC Virtual ASD Men's Group Age 15-25	26 Movie Under the Stars
27 Sexuality, Relationships, & Boundaries Age 18+ Dungeons & Dragons Age 25+	28 TASC Virtual Ladies Group Age 15-25 In-Person ASD Men's Group Age 15-25	29 Adult Ladies Group 25+ Among Us 25+ TASC	30 Karaoke & Trivia Age 25+ Small Group Hangout Ages 10-25	■ ADULT Experiences ■ YOUTH and YOUNG ADULT Experiences ■ Community Workshops		

Figure 8. Monthly Calendar with Thrive's Events and Community Programs

In the next chapter, we will discuss the methods we used to achieve our project's goal. Following that, we will provide a summary of our research's findings about the food assortment requirements, partnerships, and effective operating procedures included in the Thrive Food Pantry's sustainable plans. We will also discuss our recommendations for Thrive when they begin construction and make connections for the Thrive Food Pantry's operations. In our report's final section, we will present the conclusions that we found throughout our project that will be helpful when developing the Thrive Food Pantry and other food pantries focused on assisting the ASD, ID, and DD population.

Chapter 2: The Thrive Food Pantry's Building Blocks

The goal of this project was to develop a long-term plan for a Thrive Food Pantry in Worcester, MA 01605, that will assist the ASD, ID, DD population in the region and fight food insecurity in Worcester. To achieve this goal, our project focused on four primary objectives:



utilize demographical data on the population that the project is assisting to assess their nutritional and accessibility needs,



connect with nearby food pantries to better understand effective operating procedures for a food pantry,



develop precise space plans, staffing schedules, blueprints, and other deliverables for the food pantry while considering the sponsor's available space and budget, and



create partnerships with campuses, markets, and other organizations for the food pantry to continue functioning after the project's completion.

Objective 1

Our first objective was to utilize demographical data on our project's audience to determine their nutritional and accessibility needs. We gathered data about our target demographic from the U.S. Census Bureau, the Worcester Almanac, and from interviews with Thrive's employees to accomplish this objective. With the information we compiled from these reliable sources, we concluded that the nutritional and accessibility needs that our project would address are the clients' multicultural cuisines and dietary sensitivities. We conducted five interviews to better understand our target demographic's specific multicultural cuisines and dietary sensitivities; one with a researcher that conducts research about food insecurity, and four with social workers that work directly with our project's audience. We also reviewed cookbooks, specialized websites, and peer-reviewed articles that discuss the value of traditional food for an individual's cultural identity and the ingredients utilized when preparing culture-specific and allergen-friendly meals.

Objective 2

Our second objective was to connect with nearby food pantries to learn effective operating procedures for food pantries to help us outline the operational procedures that Thrive will implement into the Thrive Food Pantry. We used emails as our primary contact method and phone calls as our follow-up method to effectively reach out to food pantries in Worcester whose values and community services align with Thrive's mission. The food pantries that we reached out to were the Southern Worcester Neighborhood Center, Friendly House, and the Boys and Girls Club of Worcester. We conducted interviews and visual resource assessments at the Southern Worcester Neighborhood Center and Friendly House. We also interviewed the Boys and Girls Club of Worcester. Our interview questions addressed the number of staff members and volunteers required for some of the functions within their food pantry, preferred materials for shelving and refrigeration units, their primary food sources, their primary volunteer sources, effective funding sources that the Thrive Food Pantry can seek, and potential food sources that Thrive can connect with after preparing the food pantry's space. After we collected this information, we coded the interviews to identify themes and extract relevant data for our research about how we could meet our target audience's nutritional and accessibility needs (Campbell et al., 2013, pp. 311-313). When we completed the coding process, we presented our findings to our sponsor and advisor to receive revisions and feedback regarding our sustainable plan's draft. We continued revising the food pantry's operating procedures until our sponsor and advisor approved the project's report.

Objective 3

Our third objective was to develop precise space and inventory plans while considering the sponsor's available space and budget. During our first week on-site, we assessed the desired space for the food pantry. After viewing the site, we brainstormed possible site layouts. The layout included areas for storage, club activities and a sensory room. We took measurements to digitally recreate the site to better see our working environment. We developed the blueprint and space plans in a program called Revit because it is an effective way to create a detailed site plan that displays the space's measurements and amenities (Autodesk, n.d., para. 1-8). Our layout was designed in our sponsor's vision to use the space not only for a food pantry, but also dedicating areas for storage, a club area, kitchen, bathroom and sensory room.

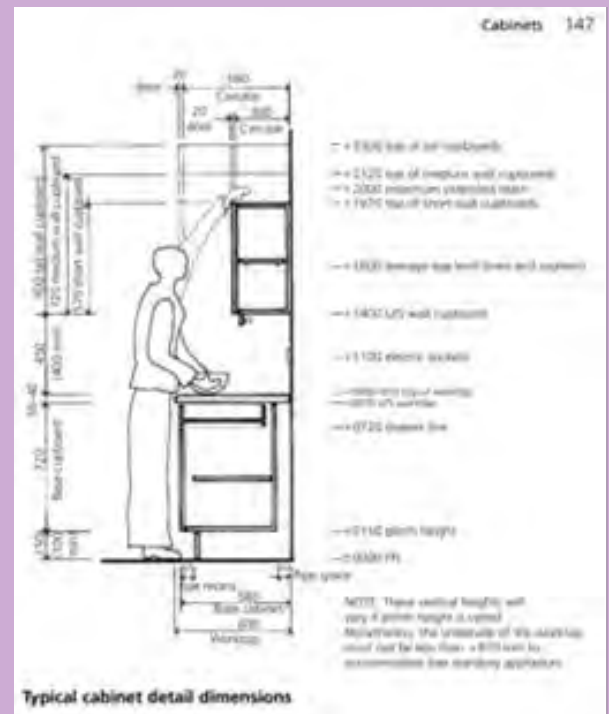


Figure 9. Typical cabinet detail dimensions. (Baden-Powell, 2005, p. 147)

Since half of the site is a food pantry, we had to consider general storage for tools and nonperishables, cold storage for long term storage of certain products and refrigeration. After measuring the site and determining the best locations for storage and how many units needed, we used Figure 9 to determine the average accommodating heights in cabinets. We will also need refrigeration for long term storage of certain products. Fridges can come in all sorts of shapes and sizes like walk-in or reach-in to best accommodate our space. These types of fridges and storage will be selected based on our budget and size constraints.

Lastly, the Thrive Food Pantry will feature a club area for community activities and a sensory room for the youth and adults living with disabilities when they need a place to calm down. The items dedicated to the sensory room will give Thrive's clients the ability to engage in activities using their senses, practice skills and improve upon challenges they face living with disabilities. To gather some ideas on what items could be included in the sensory room, we visited Thrive's location in Marlborough where they allowed us to tour the space and show us their sensory room and activities room. Figure 10 shows the sensory/ activities room at Thrive's Marlborough location. Provided insight from Thrive's Marlborough location on what could be included in Thrive's potential sensory room and club area at their location in Worcester, we were able to brainstorm and research those specific items as additions to the sensory room and club area of the food pantry's site. In order to keep track of the items that could be dedicated to the club area and the items that could be dedicated to the sensory room and their respective costs, purchasing locations, dimensions, availability, specifications and more, we created excel spreadsheets with this data. We also created an excel spreadsheet with the data for the rough estimate on the total cost of the items in addition to cabinetry and other means of storage. We also researched the best practices of how to effectively use a sensory room.

The Thrive Food Pantry will be able to succeed with the generous grants and donations provided. However, it is important that this extension of Thrive's services stay budget-friendly. Providing for this food pantry, the sensory room and club activities area will require many resources, but it can be made possible through the support from the community and partnerships.



Figure 10. Sensory room at Thrive's Marlborough location

Chapter 3: Findings for Starting Food Pantries

In this chapter, we will discuss our research's findings and analyze how our project's results can impact the Thrive Food Pantry's operations. Therefore, this section is divided into nine different themes according to the various components involved in Thrive Food Pantry's plans:

1. Findings about the clients' nutritional and accessibility needs,
2. Findings about food pantry staffing,
3. Findings about partnerships for food pantries,
4. Findings about storage materials for food pantries,
5. Findings about effective operating hours for food pantries, and
6. Findings about sensory rooms.

Findings about the Clients' Nutritional and Accessibility Needs

1. The two nutritional and accessibility needs that food pantries should address through their assortment are multicultural cuisines and allergen-free diets.

One of our sponsor's primary concerns is to allow their clients to have access to their ethnicities' traditional ingredients. This concern highlighted According to the U.S. Census Bureau, our target demographic's ethnicities are predominantly White Alone (54%) (2000f), Hispanic or Latino (32%) (2000c), and Black or African American Alone (7%) (2000b). We also found that food allergens are responsible for 30 to 40% of anaphylaxis cases in all age groups in the United States and 70 to 80% of the anaphylaxis cases in children in the United States (Branum & Lukacs, 2009; Clark et al., 2011; Decker et al., 2008; F. Huang et al., 2012; Lin et al., 2008; Rudders et al., 2010). We also found that the eight most prevalent allergenic foods are eggs, milk, wheat, peanuts, tree nuts, shellfish, soybeans, and fish. These eight food categories are responsible for approximately 90% of all food allergies in the United States (University of Nebraska-Lincoln, n.d., para. 1).

Findings about Food Pantry Staffing

2. Food pantries require a dedicated paid staff and 4-6 consistent volunteers.

Our finding about effective food pantry staffing is that all the food pantries and food distributors that we interviewed had at least one employee responsible for reaching out to and receiving phone calls and emails from large suppliers, food banks, and other organizations willing to donate food. This behavior is indispensable for food pantries because it maintains a steady food supply for the establishment. Considering that local food pantries and food distributors operate during regular business hours, the partnership-oriented employee should be available during that timeframe.

We also found that there should be 3-4 volunteers operating the food pantry. We noticed that there usually were 1-2 volunteers dedicated to preparing the food boxes that the food pantry clients would take home, while the other volunteers maintained their establishment. We also suggest that food pantries should have at least two employees monitoring their establishment to coordinate their volunteers and ensure all the food pantry's needs are being addressed. This operating procedure benefits food pantries because it considers the location's space and needs, but these efforts can be adjusted according to the food pantry's clients.

Finally, we found that there should be 1-2 food pantry employees or volunteers that picked up food that could not be delivered directly to their establishment because of the distance between the two organizations. This approach benefits food pantries because the institutions can continue receiving food donations even when the food provider cannot deliver the food directly. Our sponsor also wants to deliver food to individuals within the food pantry's zip code that cannot go to the establishment by themselves due to health conditions or other reasons.

Findings about Partnerships for Food Pantries

During our research, we found that there are three indispensable partnership categories for food pantries to have a sustainable operating plan: funding partnerships, volunteering partnerships, and food source partnerships. Thus, our partnership findings section is divided into three subsections so we can adequately outline and analyze our results.

Findings about Funding Partnerships

3. Food pantries should apply for funds on a regular basis.

Our interviewees recommended food pantry employees reach out to their regional food bank, the USDA, and other non-profit community foundations as potential sources for food pantry funding. Since each of the organizations offers different funding categories such as activation funds and operation funds, we highly suggest that the food pantries' employees observe these organizations' websites and connect with the individual listed as the employee responsible for that specific grant within the donor organization.

Findings about Volunteering Partnerships

4. Food pantries should connect with local universities, fraternities, sororities, and other charitable organizations to recruit volunteers.

During our interviews with WPI faculty members, we found that universities, fraternities, and sororities are often looking for volunteering opportunities for students. Fraternities and sororities assist local causes through volunteerism, fundraising and community service events, while universities connect students with non-profit organizations as part of their work-study components and a mechanism for students to give back to their communities. These partnerships can benefit food pantries because they grant them the volunteers necessary to continue assisting their target audience.

Findings about Food Source Partnerships

5. Prepare a letterhead before connecting with potential food suppliers.

During our interviews with grocery stores and large suppliers, we found that most food suppliers require letterheads when requesting food donations if they are commercial establishments. These letterheads must include the food pantry's tax-exempt number, mission, and information about their specific food donation request.

6. Food pantries should connect with local universities, fraternities, sororities, and other charitable organizations to obtain food donations.

Even though we were not able to receive many responses from organization representatives during our research because we worked during the summer, we conducted a meeting with our Dean of Students and our Director of Student Activities, and he recommended food pantries to contact local universities' dining services when the school year returns and there is an increase in food surplus at the educational institutions. We also suggest food pantries to reach out to fraternities and sororities because they conduct charity events and philanthropic donations on a regular basis.

Findings about Storage and Worktop Materials for Food Pantries

7. Stainless steel shelving and refrigerators are ideal for storage within food pantries.

All the food pantry representatives we interviewed used or recommended that we use stainless steel as our primary shelving material. The interviewees also highlighted that double-door, stainless-steel refrigerators are ideal for food pantries because of their cleanliness and spaciousness. Even though stainless-steel shelving is one of the most expensive storage options, it is more hygienic, hypoallergenic, and has a greater useful life when compared to its alternatives such as melamine-faced chipboards (Baden-Powell, 2005, p. 144). Stainless steel shelving is also "impervious to water and insect damage", "fire resistant and can be a durable choice for domestic kitchens" (Baden-Powell, 2005, p. 144). Although stainless-steel shelving is one of the most expensive options for storage materials, we highly encourage its use because it effectively maintains the Thrive Food Pantry's cleanliness and food quality preservation.

Findings about Effective Operating Hours for Food Pantries

8. Food pantries should have evening and weekend hours to better assist their clients.

Our food pantry interviewees and sponsor expressed the need for evening and weekend hours along with the food pantries' regular business hours to accommodate their clients' work and school schedules. Since food pantry clients often cannot access the establishment during business hours because of work, school, family-related needs, and other reasons. This occurrence is what makes evening and weekend hours are one of the best practices that food pantries can use to expand their food pantry's accessibility for individuals attending school and for adults that are full-time workers.

Findings about Sensory Rooms

9. A sensory room is a place for someone to calm down, relax and exercise their senses using specialized sensory items and equipment.

One unique addition that the Thrive Food Pantry will have that a typical food pantry does not have is a sensory room. Gwen, a writer for Meraki Lane, defines a sensory room as “a dedicated space in which the sensory stimuli an individual experiences can be increased or decreased depending on her needs. Through the use of various sensory room equipment, therapists and caregivers can help a sensory sensitive child explore different sights, sounds, tastes, textures, and forms of movement in a safe environment” (Meraki Lane, n.d., para. 5). Items and equipment in the sensory room will give Thrive’s clients the ability to practice using their senses to improve upon spatial awareness, motor skills and visual sensory challenges, engage in tactile sensory integration activities and oral sensory activities, work on their auditory processing challenges, and feel calm and safe when needed (Meraki Lane, n.d., para. 12-32). The sensory room will play an important role in serving as a place to relax, stay calm, and feel safe outside of the naturally noisy environment the food pantry and club activities area will produce.

10. There are three main components to a sensory room: soundproofing, items and equipment contained within the sensory room, and well-trained staff and caregivers assisting with activities.

Our research and the site visit and interview we conducted with a staff member at Thrive’s Marlborough location revealed that there are three main components of a sensory room. One main component is ensuring that a sensory room stays capable of being a calm and safe place with a quiet atmosphere, which relies on it having some sort of soundproof divisions from the environment outside (Figure 11). Another component is about what a sensory room consists of in terms of equipment, activities and other sensory items such as toys. And lastly, one of the most important components is having staff with the knowledge and training that allows the purpose of the sensory room to be successfully fulfilled.

The first component mentioned focuses on ensuring that a sensory room feels like a separate place from the outside environment. In order to keep the feeling of relaxation, safety and calmness relies on it being relatively quiet, something that soundproof walls and curtains are able to provide. This is especially important for a sensory room located in a busy environment.

The second component mentioned focuses on the items and equipment contained in a sensory room and the activities that will fulfill the purposes of each item and piece of equipment used. The items in a sensory room address the senses: proprioceptive, visual, auditory, smell, oral, tactile and vestibular/spatial awareness. There are many items we found that would be good choices to include in a sensory room because they collectively address all of the senses mentioned previously. A sensory sack would be a good choice for the proprioceptive sense, puzzles would be a good choice for addressing the visual sense, keyboards would be a good choice for addressing the auditory sense, and scented puddy would be a good choice for addressing both the smell and tactile senses. Chewable toys would be a good choice for the oral sense and a swing would be a good choice for the vestibular sense also known as spatial awareness.

The last, and perhaps one of the most important components of a sensory room, is having a team of staff members with the knowledge of how to effectively use and maintain the items and equipment provided in the sensory room and specialized staff assisting with activities. Betty Ray, a writer for Edutopia stated the importance to “develop a program and protocol for how staff should use and maintain the room—and make sure your staff is trained”(Edutopia, 2017, para. 31). According to the article Ray had written, at the sensory room at Hanover Elementary of the Meriden Public Schools in Connecticut, an occupational therapist and a physical therapist worked with students (Edutopia, 2017, para. 8). It is imperative for a sensory room to have a team of well-trained staff members and caregivers engaging with student during activities and maintaining the sensory room properly.

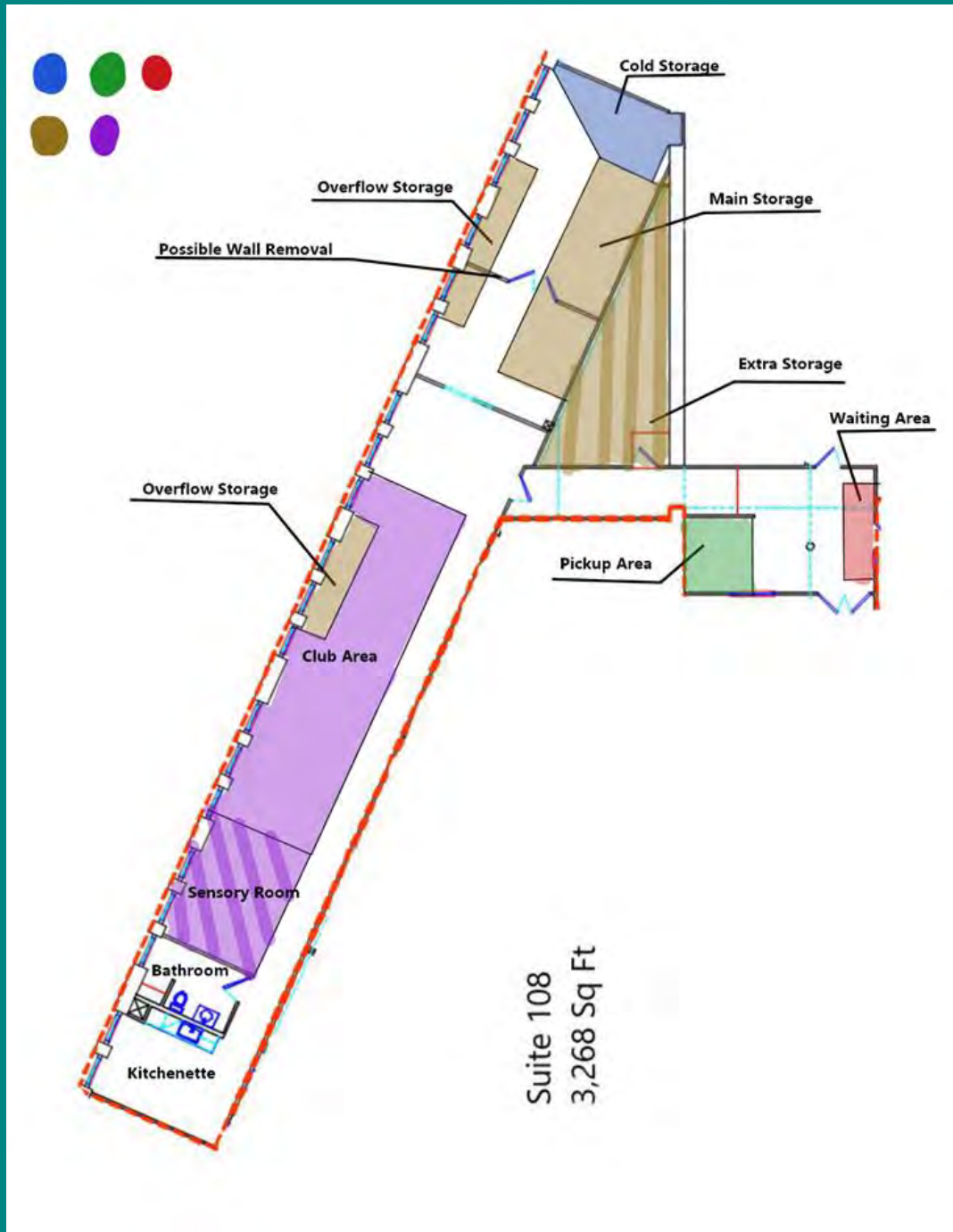


Figure 11. Site Layout for the Food Pantry, Club Area, and Sensory Room.

Chapter 4: Recommendations for the Thrive Food Pantry

In light of our project's findings and their significance, we compiled recommendations that our sponsor and other food pantries can implement to successfully develop and maintain an inclusive and effective food service for their communities. To better detail the needs that a food pantry's plans must address to be sustainable and truly assist their clients, this chapter is divided into eight sections:

1. Nutritional and accessibility recommendations,
2. Partnership recommendations,
3. Site layout recommendations,
4. Club area and sensory room item recommendations, and
5. Community involvement recommendations.

Nutritional and Accessibility Recommendations

1. Offer food safety training for volunteers and employees working at the Thrive Food Pantry.

Our first suggestion is to offer food safety training for the volunteers and Thrive employees working at the food pantry. Since food allergens are responsible for 30 to 40% of anaphylaxis cases in all age groups in the United States and 70 to 80% of the anaphylaxis cases in children in United States (Branum & Lukacs, 2009; Clark et al., 2011; Decker et al., 2008; F. Huang et al., 2012; Lin et al., 2008; Rudders et al., 2010), we believe food safety training is indispensable for the food pantry's staff because it will give them the resources to safeguard their audience's health to the best of their ability. These training modules will include instructions about the allergen-free diets, adequate storage hygiene, and the quality and sanitary standards that our food must have when entering the food pantry to ensure the clients' safety.

2. Use user-friendly signage to allow Thrive's clients to better orient themselves within the food pantry.

Our second recommendation is to use colorful, user-friendly signage within the client-choice portion of the Thrive Food Pantry. Our sponsor wants the Thrive Food Pantry to use client-choice and boxed food approaches to allow the food pantry to be a more inclusive environment for our target demographic. This choice increases the importance of user-friendly signage that uses symbols, images, color-coding, and scripts in more than one language because it increases the food pantry's accessibility for the ASD, ID, and DD population as well as for individuals within our audience that do not have English as their first language. Our approach also decreases the risk of cross-contamination and ingestion of allergenic foods by clients with food allergies.

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3. Prepare food boxes with ingredients for balanced meals before and during the Thrive Food Pantry's business hours.

Our third consideration is to prepare food boxes before and during the food pantry's business hours. We recommend that food boxing should occur before the food pantry opens to the public and during its operating hours to maximize the boxed food program's efficiency, but we also know that the number of people attending a food pantry can oscillate depending on the day. This approach can be adjusted according to the number of clients visiting the Thrive Food Pantry during the week.

We also suggest that the food boxes should contain a balanced assortment of food that can be combined to form healthy meals. The Southern Worcester Neighborhood Center recommended this approach because it allows their clients to prepare meals with the ingredients inside their boxes and have access to the vitamins and minerals that they need every day. We believe this approach is indispensable to the Thrive Food Pantry's long-term plans because it effectively addresses their clients' nutritional needs by granting them the resources to do so.

4. Acquire a set of cookbooks that address multicultural cuisines and allergen-free meals to assist clients.

Our last recommendation is to have a set of cookbooks with multicultural and allergen-free meal instructions for Thrive's clients. Our sponsor expressed the desire to have a library section within their establishment for their audience to have access to books about ASD, ID, and DD as well as cookbooks that they can use. Considering the clients' multiethnic background and common food allergies, we believe that having literature that help Thrive's target demographic adjust to allergen-free diets or prepare traditional meals from their cultures is important to Thrive's mission because it creates a more inclusive environment within the Thrive Food Pantry and gives our target demographic the knowledge to make healthier choices and improve their quality of life.

Partnership Recommendations

Volunteering Partnership Recommendations

5. Contact WPI's Student Activities Faculty and Community Services organizers.

Our first consideration is to reach out to universities, fraternities, sororities, and charitable organizations for volunteers and community services in Worcester once the school year returns. We were not able to receive many responses from university representatives during our project's research because we worked during the summer break. However, we conducted a meeting with our institution's Dean of Students, and he recommended Thrive to get involved in WPI's Student Activities Fair to spread awareness about their efforts and to find volunteers. Our interviewee also recommended us to contact WPI's Assistant Director of Student Support to establish a work-study program for WPI students to continue assisting the Thrive Food Pantry's operations. We recommend that, beyond the scope of our part of the project, the community at WPI stays involved in the Thrive Food Pantry by volunteering at the food pantry once it officially starts up and to host donations and food drives with fun activities anyone can participate in. We recommend the continuation of community involvement as it will bring people together and educate and spread awareness of the Thrive Food Pantry in Worcester.

We also suggest Thrive to reach out to fraternities, sororities, and other local universities in Worcester such as WSU, Clark University, and the College of the Holy Cross. Other charitable organizations that we recommend Thrive to connect with are the United Way of Central Massachusetts, the Greater Worcester Community Foundation, and Catholic Charities' Senior Community Services Employment Program. We believe that spreading awareness and setting up donations from drives at schools and educational institutions as well as businesses will be of great beneficial value.

6. Consider your audience's linguistic and accessibility needs when advertising your need for volunteers.

Our final recommendation for the staffing component of the Thrive Food Pantry's long-term plans is considering the demographical characteristics of your audience when selecting your preferences when selecting volunteers for the food pantry. During our sponsor meetings and interviews with Thrive's employees, our interviewees expressed a preference for bilingual individuals and volunteers with experience assisting individuals with ASD, ID, and DD. However, our sponsor will not require these specific characteristics when searching for volunteers for the Thrive Food Pantry.

Funding Partnership Recommendations

7. Apply for grants through the Greater Worcester Community Foundation, United Way of Central Massachusetts, USDA, and the Worcester County Food Bank.

Throughout our interviews with representatives and researchers from the Worcester Regional Chamber of Commerce, the Worcester Regional Food Hub, Rachel's Table, and Friendly House, our interviewees recommended Thrive to reach out to the Greater Worcester Community Foundation, the Health Foundation of Central Massachusetts, the United Way, the USDA, and the Worcester County Food Bank as potential sources for the Thrive Food Pantry's funding. Each of the organizations offer different funding categories such as activation funds and operation funds. After researching each of the organizations' funding requisites, we prepared a deliverable with information about funding opportunities that Thrive can apply for during the next financial year's application period.

Food Source Partnership Recommendations

8. Connect with Shaw's, Price Rite, Bahnan's, Plaza Supermarkets weekly for food donations.

Our first suggestion is to call and email Shaw's, Price Rite, Bahnan's, Plaza Supermarket, and other grocery stores and large suppliers on a weekly basis to receive donations from them. Once Thrive has a letterhead prepared for food donation requests, they can either send the document electronically or deliver the letter at the suppliers' establishments. This approach is beneficial to the Thrive Food Pantry because gives the food service a larger number of food sources and increases the diversity of food options for Thrive's clients.

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9. Partner with Friendly House, the Worcester Regional Food Hub, and Rachel's Table to receive food surpluses from them.

Our second consideration is to contact Rachel's Table, the Worcester Regional Food Hub, and Friendly House for food surpluses. During our interviews, these two organizations expressed interest in assisting the Thrive Food Pantry with the extra food they have available. Therefore, we highly encourage Thrive to reach out to these organizations on a weekly basis to maintain partnerships with them and acquire more food donations for the Thrive Food Pantry.

10. Connect with the Worcester County Food Bank to obtain a consistent food supply once the Thrive Food Pantry opens.

Our final recommendation for the Thrive Food Pantry once its space is ready for the public is to reach out to the Worcester County Food Bank. Most of our interviewees has the Worcester County Food Bank as their primary source of food donations to sustain their food pantries. Since we were not able to establish a connection with the local food bank during our research because of the project's limited timeframe, we highly recommend for Thrive to contact the Worcester County Food Bank and establish an official partnership with the organization.

Site Layout Recommendations

11. Consider using a space that is fully ADA compliant.

Another recommendation to consider is finding another space for the Thrive Food Pantry that can be fully ADA compliant, as the original location we have done research at is not ADA compliant. Being fully ADA compliant will not only avoid restrictions on who can enter the food pantry and have access to the sensory room and club area activities provided, but would also provide for a more inclusive environment, a very important aspect for the Thrive Food Pantry to have. However, if our sponsor does not find another space for the Thrive Food Pantry, there still are ways to increase the current location's accessibility for the clients.

While the site itself cannot be fully ADA compliant due to a large slope to the entrance of the pantry, more can be done to accommodate everyone's needs. This includes things like installing handrails up the ramp to give clients and easier time. We also recommend including handrails near the toilet or in the shower to allow easy access. The pantry shelving should be spaced appropriately to allow for a clearance of 3 feet for all wheelchairs. Seen in the blueprints, we were able to measure every opening to ensure a wheelchair could fit through. All doors are 3 feet in width and do not need to be changed.

12. Store the food and site equipment using our floor plan's calculated dimensions to increase the site's accessibility.

After designing the site in Revit, as shown in Figure 12, we were able to get a good layout for the type of storage we need. The final blueprint will be included in our deliverables. After analyzing different layouts, we were able to get the appropriate amount of storage. For the pantry area, we recommended using 48" by 24" metal shelving as this will maximize the space available. These metal shelves can be used in the waiting area to hold the boxed food until pickup. We believe that 24" of depth is a sufficient amount to hold most items. To contain more perishable items, 30" by 54" commercial fridges will fit on the back wall. Since the fridges are the most expensive item, we recommend getting them second-hand. Because Becker College, a local Worcester college, is closing, we recommend getting in contact with their representatives to purchase these units. The window should be lined with 48" by 24" kitchen cabinets.

Since many people visiting the site have disabilities, we are following public building codes to provide accessibility in the food pantry's storage area to those that need it. One solution could be lower shelf placements because "[b]ase units should be fitted with drawers and pull-out baskets, rather than fixed shelves" (Baden-Powell, 2005, p. 53). The ability to reach a large variety of items in a more accessible location would make the clients feel like they are not restricted. Pull-out drawers give clients who use wheelchairs more room to maneuver and not have their knees get in the way. While the clients may not be able to reach the top shelf, volunteers are available to help them obtain the items they need. Finally, to maximize our space and create an open feel, we will remove the wall to allow for a continuous storage system in Figure 12.



Figure 12. Storage Room's Internal Layout

For the kitchenette, the wall should be containing a variety of 24"x24" tall cabinets. As well as 24" by 24" kitchen cabinets to accommodate other food and allow for a workspace to prep food. Both these cabinets can be locked using simple childproof locks to ensure no one can take food or other supplies. In the club area, we recommend a mix of 24" by 24" tall cabinets and 48" by 24" or 24" by 24" kitchen cabinets to hold games, toys, and other items. Much like the kitchenette, these cabinets can be childproofed to ensure no items are taken. The tall cabinets fit best on the club area wall while the kitchen cabinets fit best along the window. The space on top of these window cabinets can be used for additional bin storage or provide adequate sunlight to grow plants.

Club Area and Sensory Room Item Recommendations

13. Develop the club area and sensory room's activities based on your audience's preferences and responses to previous programs.

We recommend creating more activity programs, specifically STEM-related activities, and ideas based on the audience's reaction to our original activity programs and ideas. If there are new items or replacement items needed for these activities or for the sensory room, they can be logged into our deliverable at any time since our spreadsheet deliverable is dynamic and can be edited. It will be easy projecting final costs based on how many of each item logged into the spreadsheet there is a need for since Excel spreadsheets have built-in functions to calculate the total for you. Over the course of the project, Thrive has been offered a television, floormats, crash pads, video games and more by generous donors.

14. Seek item donations from the Worcester community.

The final projected cost of all the items ultimately decided on being included in the club area and sensory room could seem daunting. To keep the total costs budget-friendly, we recommend reaching out to the community by hosting community programs and acquiring more donations for some of the items these two spaces need.

