

food accessibility in pittsburgh

team mmm · user centered research + evaluation · spring 2017

contents

introduction

project focus	4-5
mission statement	6-7

domain research

food deserts	9-10
literature review	11-13

key findings

accessibility	15-16
food education	17
sustainability	18

interventions

recipe cards	20
volunteer co-op	21

survey analysis

visualizations	20-26
key takeaways	27-29

next steps

long-term goals	9
short-term focus	11
dataset	13

key findings

transportation	16
food education	17
sustainability	18

bibliography

appendix

maggie banks, grace guo, tiffany jiang
user centered research and evaluation
carnegie mellon university, spring 2017

introduction

overview · project focus · problem area · mission statement

project overview

Our process began with a literature review of the state of food accessibility in Pittsburgh and the existing solutions used to combat the problem. Having gained this holistic overview, we approached a number of food pantries and soup kitchens for interviews and contextual inquiries. This helped us understand the personal stories of clients, as well as deepen our understanding of how food banks operate, their objectives and challenges.

The qualitative data we gathered were then organized into an affinity model, from which we were able to discern the common patterns of experiences and problems. The data was also used to create contextual models and personas. We also made customer journey maps to help us better understand the clients, their frustrations and where potential design opportunities were.

We also conducted a survey with the greater Pittsburgh community that sought to understand patterns in donations and volunteering. This survey helped us identify where misunderstandings and miscommunications were.

Finally, during the ideation phase we constructed “How might we...” statements that aimed to reframe the current state of things. These statements provided a new direction for us to work towards. We were thus able to generate possible solutions and refined them by referring back to our personas and journey maps. Our final proposed solutions were captured in storyboards to illustrate the experiences customers will now have.

project focus

Many low-income Pittsburgh residents have difficulties getting access to fresh and healthy food options today.

We want to develop a sustainable solution that teaches clients to be independent in how they obtain their food so that they are not relying on food banks or kitchens to provide for them in the long-run.

problem area

What is the situation?

We are concerned about low-income families and individuals who experience food insecurity on a regular basis. They have limited or no access to public transportation. We think they could benefit from having a better grasp on how to obtain and prepare healthy foods. We assume that they have limited access to the Internet and do not have personal computers or mobile devices.

Who are the actors?

The main actors are volunteers and those in need. Without any volunteers, food banks, kitchens and pantries would not be able to operate. The local and federal government are closely involved. Food distributors and grocery stores are also important.

Food insecurity in the greater Pittsburgh area affects many people daily. Families, seniors, disabled and able-bodied people struggle to obtain healthy food. We want to focus on the people living in food deserts - people who have little to no access to transportation.

We are aware that our assumptions will affect our research. As outsiders, we are assuming that those in need want help in the first place. We are also making assumptions about volunteers. We assume that anyone outside of a food desert has the ability

What are the activities?

Most activities require a community effort. People donate goods and money to organizations. Volunteers help distribute food and resources to those in need. Farmers and community members help grow fresh produce. The local and federal government help create accessible public transportation.

What's the desired outcome?

Our low-cost and sustainable solution will focus on food literacy, accessibility and long-term growth. Clients want to be able to get their food more immediately and in an accessible manner.

What are the current patterns?

Currently, individuals rely on gardens, food pantries, food banks, and kitchens for their meals. These places need volunteers to keep their doors open. People who can't afford much tend to reach for junk food because it is convenient and cheap. This leads to obesity, stress and other diseases.

People don't have easy access to public transportation which is a problem. Many people can't make it to the food banks or kitchens by bus and have to travel by foot. Many individuals in need of food have health problems. It is difficult for them to get outside. They do not do well in the harsh weather conditions and hilly terrain.

our mission:

Diminish food insecurity through education and affordable access.

our purpose:

Diminish food insecurity through education and affordable access.

food insecurity

1. Provide better access to public transportation.

People currently struggle to obtain healthy foods because they cannot make a trlack of time, physical mobility issues.

education

2. Encourage better decision making when selecting and preparing foods.

We want to educate people about the benefits of eating healthy.

affordable access

3. Create a sustainable and cost-effective solution that regularly brings healthy food to people in food deserts.

We hope to eliminate the need to travel for some people by bringing food to them instead.

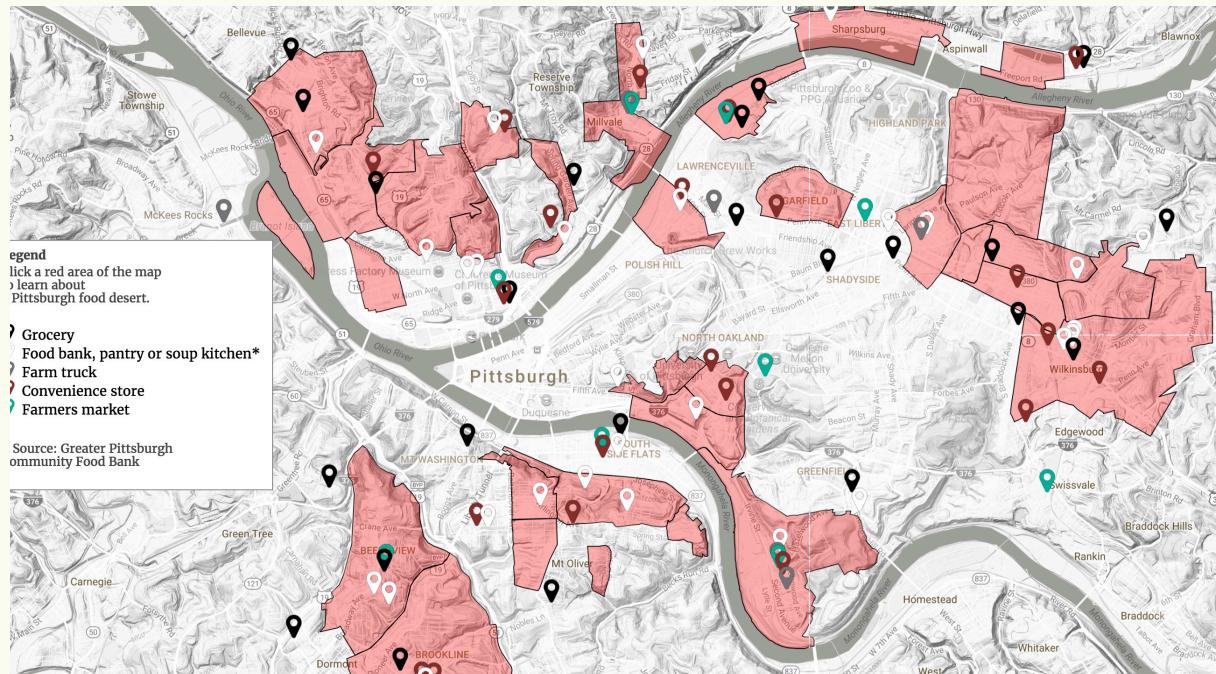
domain research

literature review · dataset · stakeholder map

literature review

What is a food desert?

Individuals living more than a mile away from a grocery store is considered to be in a food desert. For rural residents, the nearest store is located more than ten miles away. In 2012, the US Dept. of Treasury reported that 47% of Pittsburgh residents live in food deserts (Pittsburgh Post-Gazette).



Key Finding

Many people do not realize how many Pittsburgh residents live in food deserts given the number of successful restaurants located in the city. These individuals want regular access to fresh groceries nearby. For people without transportation, this means a walkable distance during all seasons.

"[The map] shows change in the size of food deserts when farmers' markets are available (in the summer) compared to the winter months when only grocery stores are available. The size of the food deserts shrinks during months when farmers' markets are active and produce is available."

— Indiana Public Media, 2010

<http://indianapublicmedia.org/eartheats/farmers-markets-bring-life-cities-food-deserts/>

literature review

What causes this problem?

Pittsburgh's topography makes it difficult for people to get to the grocery store both physically and psychologically. Colder months make it difficult for people to go outside. Many areas lack access to public transportation. Grocery stores are simply too far away.

In-store marketing techniques also are a problem as they tempt people into buying unhealthy products for cheap prices. People who are low-income are more likely to reach for frozen foods than buy fresh produce.

Key Finding

The current solutions reach only a local network of people specific to location. These solutions act as a band-aid fix onto a nationwide problem. The residents are in need of continual access to healthy produce and groceries without having to put in extra work based on their geographic location.

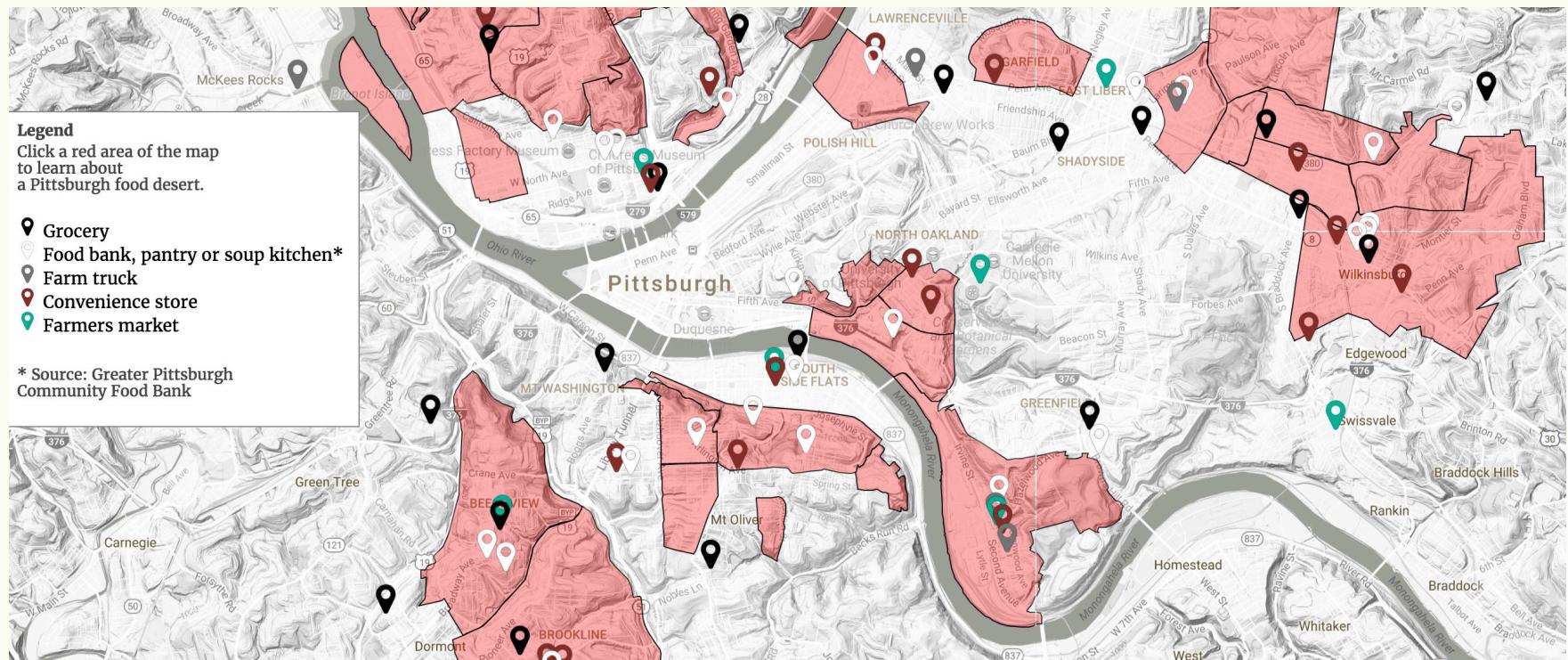
Plant to Plate is a Pittsburgh community garden located on Oakland Avenue.
http://archive.allegenyfront.org/sites/default/files/images/SAM_1210-2.jpg



literature review

Why should we care?

The issue affects more than just those who are directly dealing with food insecurity or living in food deserts. The communities in Pittsburgh should get educated about the situation and find ways to get involved. Providing food to the people is only one form of a solution but does not get rid of the problem entirely. This is a community-wide challenge.



Below is a map showing where the food deserts are located in the greater Pittsburgh area. The map also provides information on where the people live in relation to markets and food banks.
<http://newsinteractive.post-gazette.com/food-deserts/>

Key Finding

Food banks and kitchens rely heavily on the volunteers for help. A person's food source should not depend on another person's willingness to volunteer. People should not be denied access from a food bank just because they earn \$100 more than their neighbor. Lastly, if people cannot get food as a result of the weather or lack of transportation, then they should be brought food instead.

existing solutions

What are current solutions?

Pittsburgh has a number of food banks, food pantries, community gardens, and farmer's markets that provide food to those in need.

Grow Pittsburgh helps to jump start community gardens in areas that don't have easy access to affordable and healthy food.

Back of the House, a Youth Places program, helps teenagers get jobs at local restaurants as cooks so they can learn how to cook while expanding their knowledge about healthy eating habits.

Just Harvest provides Fresh Access Food Tokens to customers who buy groceries with an EBT card. These tokens can be used to buy food at local cornerstores which are stocked with healthy options. For every \$5 purchase, customers get another \$2 to spend.

Image on the right is of a community garden in the neighborhood of Braddock
<http://localfoodsystems.org/lfsstorytellers/system/files/Pittsburgh%20Trip%20061.jpg>



dataset

A Menu for Food Justice

This dataset was compiled by Just Harvest, a non-profit working to end hunger in Pittsburgh. The document contains strategies on how to improve access to healthy foods. The pages include many detailed datasets about neighborhoods in Pittsburgh.

There is a list of food retailers in the region, maps that summarize food accessibility in Pittsburgh, the spread of food retailers, and **recommended actions to be taken**. We will use this document as a starting point to our research, referring to it when necessary.



A Menu for Food Justice

Strategies for Improving Access to Healthy Foods
in Allegheny County



Zachary Murray
Emerson Hunger Fellow

16 Terminal Way Pittsburgh, PA 15219 • telephone: 412.431.8960 • fax: 412.231.8966 • www.justharvest.org

key findings

accessibility · food education · sustainability · 3 key findings

Lack of transportation

Customers who do not have access to transportation find it difficult to make the trip to obtain food.

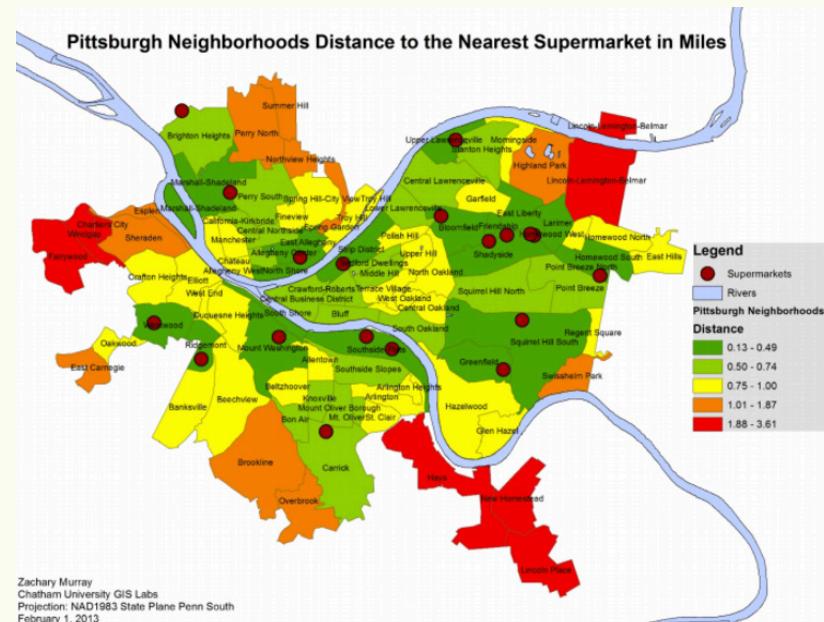
It is difficult for them to travel the long distances to get to the nearest grocery stores. The hilly terrain of Pittsburgh and harsh weather conditions doesn't help the situation.

Some customers struggle with or are recovering from physical health problems. Many of them also face mobility challenges. TJ, a client at St. Paul's food pantry, lives in Arlington and suffers from Back Arthritis and Spina Bifida. He goes to Giant Eagle to purchase food. The store is located 2 miles from his home. This distance is his greatest challenge to obtaining healthy produce.

He says that he "only [goes] grocery shopping if the weather is good and if [he feels] well". Since he can't afford to ride the bus, he has to walk everywhere. His health conditions greatly limit his mobility, both in terms of the distance he can walk and the amount of groceries he can carry per trip. Slippery winter roads also pose a threat to him as he fears dangerous accidents.

From A Menu for Food Justice (page 4): "Physical distance to healthy food adds pressure to vulnerable populations and is frequently linked to the poor diet and to disease."

TJ's experience is echoed by the other customers who travel to nearby food banks and food pantries. Paul is another client of St Paul's food pantry who finds that Pittsburgh's terrain makes it difficult to get around because of the many hills. Germaine, a visitor of Jubilee Kitchen, spends \$5 to ride the bus one-way so she can get a meal. The transportation challenges are common and take on many forms, often impeding or restricting access to sources of healthy food.



The map on the left is from our large data set: A Menu for Food Justice by JustHarvest (page 37). It can be seen that in many areas of Pittsburgh, the nearest grocery stores are more than a mile away. This distance can be daunting for individuals with mobility issues, making fresh, healthy produce much less accessible to those communities.

healthy lifestyles

Many customers want to eat well, but have trouble obtaining healthy food.

The problem stems from having a lack of transportation and also from having a lack of financial support. Customers of food banks may rely on food stamps but that limits what they can purchase at grocery stores. TJ, a client at St. Paul's food pantry, tells us what his experience was like before and after being put on food stamps.

Their options are reduced to what they can afford to buy with their own money and what they can purchase on food stamps. Hot food, for example, cannot be purchased with food stamps. TJ, a client of St Paul's food pantry, describes himself as a "junk food guy". When he relied on food stamps, he could not purchase hot food, so he defaulted to buying "pop or Red Bull, chips and dip" or frozen items like \$5 pizzas at 7/11.

When TJ worked as a chef, he would make a variety of healthy meals for himself from salads to battered chicken. He rarely had issues getting access to fresh ingredients. These days, TJ can barely cook meals for himself because he can't afford to purchase items like salad dressing and has lost access to food stamps.



food education

Clients at food banks and kitchens can encourage each other to try new ways of eating and preparing healthy food.

Food organizations want to try and encourage healthy cooking habits also educating people about food literacy. The customers could learn how to cook healthier meals for themselves if they had the resources and instructions to do so.

Customers like to take the foods that they are familiar with and don't tend to try new options. Tom runs the St. Paul's Monastery food bank. He's found that people usually prefer canned fruit and vegetables over fresh produce options. Tom told us that the "beets are not in a can and are not wanted because they don't look as appetizing". He also noted that "canned pumpkin is not a mover." Clients at his food bank are deterred from foods that are packaged differently and ones that do not taste good alone.

Aside from needing to obtain food, people often visit food banks and kitchens to socialize with community members in the area. Germaine, a mother of two, visits the Jubilee Kitchen located in the Hill District of Pittsburgh when she can because she enjoys the sense of community.

Despite having to commute 45 minutes one way on the bus, Germaine wants to visit the kitchen to socialize with friends. She prefers that over staying at home alone. While she visits, she picks up an extra meal for her daughter for later and also scans the bulletin board to stay up to date about news.

Germaine admits that she was used to make selective decisions about the foods that she got at food banks and pantries: "I used to be picky, but I found a new favorite food here. I love cauliflower now". Germaine's taste palette has expanded since visiting the kitchen. Germaine is willing to cook, however she doesn't have available resources to learn how to cook more dishes with the foods that banks and pantries provide.

CAN

Cooking, Activity and Nutrition Newsletter

This issue is all about canned fruits and vegetables

2 Onion and Tomato Soup

3 Peach Pancakes

4 Food Product Dating

St. Paul's Food Bank distributes newsletters to its clients about the food that they are receiving that day so that they have more information on how to cook and prepare the produce.

sustainability

People should not have to rely on food organizations as a long-term source of food and nutrients.

Food banks, pantries, and kitchens help provide clients with food at an affordable price based on their income. However, for some clients, particularly the elderly or disabled, it is especially difficult to find and maintain a steady income. This challenge makes it difficult to purchase groceries for themselves while also trying to provide enough food for a family.

On the other hand, there are clients who are accustomed to relying on food organizations, despite being able to obtain a sufficient income. This phenomenon is frustrating to people who dedicate their lives to providing food for the hungry. There is a call for finding a more sustainable solution, one that helps clients find a way to eventually provide food for themselves.

Aside from needing to obtain food, people often visit food banks and kitchens to socialize with community members in the area. Germaine, a mother of two, visits the Jubilee Kitchen located in the Hill District of Pittsburgh when she can because she enjoys the sense of community.

Food banks are so generous, customers are starting to view them as a long-term crutch. Alex frequently visits St. Paul's food bank. He is on disability and has had trouble receiving enough money from the government to support himself. Alex brings duffle bags to the food bank, ready to fill them with food. Most clients use the grocery bags provided per person. It was clear that he knew the ropes. Alex likes to bake pie for himself and his dog. He used to be a cook. Alex mentioned to us that his "fridge is always full".

In order for food banks to continue operating, customers cannot take advantage of the system. Tom, the organizer of St. Paul's food bank, tells us that the biggest challenge he faces is really the people. He notes that "some clients have been here for years. Some are able-bodied men who should not be here". Tom doesn't want to be the bad cop or judge individuals who lie and abuse the system. However, the clients who don't respect his operation make it difficult for him to focus on the people who need it the most.



The image shows St. Paul's Food Bank during its open hours on a busy day.

key finding 1

http://www.newsworks.org/images/stories/flexicontent/l_1200pgh_buses2.jpg



transportation + mobility

Reliable, accessible, and affordable transportation is key to obtaining fresh groceries on a weekly to bi-weekly cadence.

In hilly and sometimes icy terrains such as Pittsburgh, walking distances over a mile is not feasible with heavy bags of groceries. This is especially dangerous for the elderly and individuals with health issues that prevent them from walking frequently, but who are also unable to afford public transport. Often, these individuals desire to eat well, but are hindered by the accessibility of fresh produce near where they live. They are instead limited to what is available at their nearest corner stores, markets, food banks, kitchens, or pantries.

action item:

Bring food to the people, don't make people come to the food.

This can take place in many forms, for example, the Fresh Corners initiative in Allegheny brings fresh produce to corner stores that residents frequent, making healthy food more easily available. Mobile produce trucks, farmers' markets and other solutions that bring food closer to the people should be explored. Lastly, public transport more affordable, especially for individuals who are old or who have health issues.

key finding 2

<https://i0.wp.com/missionlocal.org/wp-content/uploads/2011/09/foodpantryWS1.jpg>



internal communities

Internally, communities form between the staff and clients at specific food banks/kitchens.

Frequent, sometimes weekly, interaction between the staff and clients builds up relationships at these food banks and food kitchens. Many clients choose to visit particular locations with the express intention of socializing. These communities also help clients arrange for transportation and learn about job opportunities.

action item:

Communities at food banks can be leveraged to reach out to clients in a more personable, less intimidating manner.

Doing so can help clients get in touch with the career opportunities they need, improve their food literacy, as well as motivate them to seek out the resources they require.

key finding 3

external communities

The contributions from the collective Pittsburgh community are indispensable for keeping food banks/kitchens running.

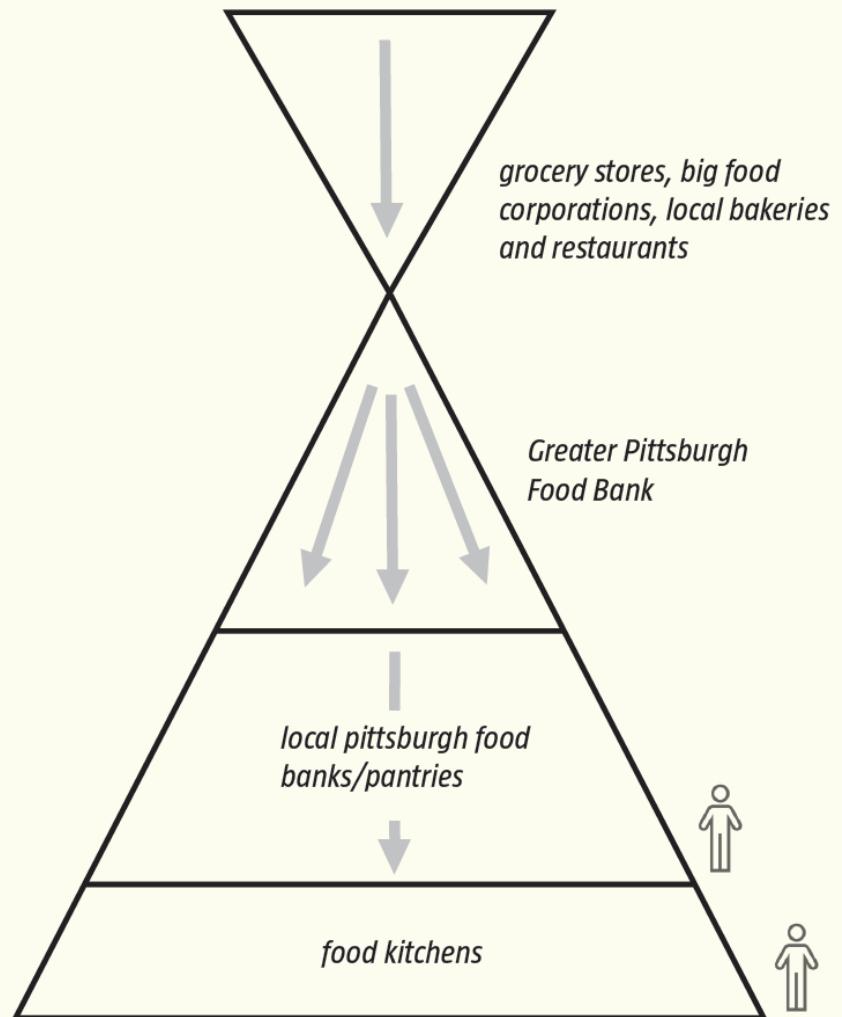
These organizations rely on companies and grocery stores to contribute leftover food to stock their shelves. However, these donations are unreliable in both frequency and type, and are highly dependent on the supply of leftovers available. Volunteers are also necessary to run their daily operations. Funding is the biggest challenge faced by food banks/kitchens. Monetary donations are needed to finance their work (buying food, paying for facilities and resources), but these are hard to come by. In part, this is because the outcomes of the work of food banks/kitchens are hard to quantify. Furthermore, the common understanding of what it means to donate to food banks is the donation of produce and dry goods.

action item:

Many food banks/kitchens appreciate donations of fresh produce as these are healthier options for their customers.

Companies that have leftover fresh produce should be encouraged to donate those as well. There also has to be a way for food banks/kitchens to tell the story of what they do and the people they help. This will require a paradigm shift in perception for many different sectors of society.

Food Distribution System in Pittsburgh



understanding our user

user personas · journey maps

user persona

User personas are archetypal users created to represent the users we are designing for. During the design process, personas provide realistic contexts and scenarios for how users will eventually interact with our proposed solutions.

Tyler Johnson



depends on:



provides for:

short term goal

wants to have his food stamps reinstated and get out of his state of limbo

long term goal

obtain a steady job that is accommodating to his health and achieve a sense of security by being able to provide for himself

"I want to have a steady job and feel secure about my situation."

age:

31

family size:

single

living situation:

lives in an apartment with a housemate

employment:

unemployed

recent history:

Tyler was just cut off from food stamps due to non-compliance with job search requirements. He was unaware that he had to log the hours he spent searching for work, and had in fact been regularly at the library trying to find employment. He is frustrated, and feels in a limbo.

motivations:

Obtain produce and groceries to tide himself over for the week.

challenges:

Health

suffers from clubfoot and osteoporosis



Distance

lives two miles away from grocery store



Track Record

difficulties finding a job



Employment

convicted felon



Gabrielle Wilson



short term goal

stay out of the cold, recover from her stroke, get converter box for her TV

long term goal

continue looking after her house and her children, keep up friendships at the soup kitchen

"I like to socialize at the soup kitchen, and bring home a meal for my kid."

age: 47

family size: 2 children (12, 21)

living situation: lives in an apartment with her children

employment: unemployed

recent history: Gabrielle suffered a stroke about five months back so she is now no longer able to work. She lives with her children and looks after the house and grocery shopping while her children are at work or at school.

motivations: Socializing with friends. Also uses it to bring food home for her daughter.

challenges: Health

recovering from a stroke



Distance

lives five miles away from soup kitchen



Transportation

bus fare costs \$5 each way



Employment

unemployed



Patrick Wright



depends on:



short term goal

continue to provide for his fiance and take care of their home

long term goal

It was not clear what Patrick's long-term goals were. He seemed content with his life and how he obtained food.

"I help my fiance out and take care of our home and the dog."

age: 32

family size: 1 dog

living situation: lives in an apartment with his fiance

employment: unemployed

recent history:

Patrick likes to cook for his fiance and have a meal ready when she comes home from work. He cooks with the food he is able to get at the food bank. They like to go out to eat on her pay days. They also use the money from her job to buy dog food. Patrick is a weekly client of St. Paul's Monastery.

motivations:

Makes his fiance happy. He doesn't work, so it helps put food on the table.

challenges:

Health

healthy enough to walk



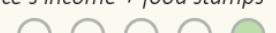
Distance

lives one miles away from food bank



Income

relies on fiance's income + food stamps



Employment

unemployed



journey map

Journey maps are visualized sequences of customer actions, organized into stages with customer feelings and frustrations at each stage mapped out. These maps helped us obtain a holistic view of their customers; they also aided in identifying touchpoints and breakdowns that can then be turned into design opportunities.

gabrielle + jubilee food kitchen

Visits the Jubilee Food Kitchen when the weather permits and when she is in good health. Recently suffered from a stroke and is currently recovering while taking care of two children. Traveling is expensive she visits the kitchen to socialize with friends.

background

Midde-aged parent of a daughter and son. Currently is unemployed and lives in an apartment. Lives 45 minutes away from the kitchen. Pays \$10 to makes the full trip.



patrick + st. paul's food pantry

Makes weekly trips to St. Paul's Food Pantry to pick up items. Walks to the grocery store that is nearby. Uses food stamps and relies on social security benefits. Does not feel pressured to find a job. In a loving relationship with fiance who works full-time.

background

Loves to cook food for himself and his fiance. Has no job and relies on his fiance for income. Walks everywhere to get around due to lack of transportation and hilly terrain.

phases	gets groceries	stays at home	visits pantry	
actions	<ul style="list-style-type: none">· Giant Eagle is nearby· has no health problems· walks to most places	<ul style="list-style-type: none">· stocks up on food for him and fiance· gets food for dog	<ul style="list-style-type: none">· relies on social security· currently unemployed· prepares meals for fiance	<ul style="list-style-type: none">· likes the food options offered at St. Paul's· brings food home· cooks for fiance
feelings	<ul style="list-style-type: none">· doesn't mind walking· happy to be on food stamps	<ul style="list-style-type: none">· likes to "keep [his] belly full" with food· enjoys cooking	<ul style="list-style-type: none">· content with having no job· doesn't feel pressure to work	<ul style="list-style-type: none">· likes to get meats and canned foods in particular· happy to find food that matches his taste
touchpoints	grocery store	home	st. paul's pantry	home
opportunities	<ul style="list-style-type: none">· more local food options· better transportation· less dangerous terrain	<ul style="list-style-type: none">· buy foods in bulk· get off food stamps	<ul style="list-style-type: none">· seek out job benefits· provide income for family· find other hobbies to do	<ul style="list-style-type: none">· better commute options· better transportation

solutions

how might we · storyboards · suggestions

how might we statements

“How might we...” statements help inspire ideation by changing the perspective being used to view the problem. By reframing the existing context, it provided us with a new direction in which new ideas could be generated.

storyboards

Storyboards are a way to tell a narrative about a possible design solution. These ideas were in response to our how might we statement. For these storyboards, we used six frames with sketches and captions to communicate our idea.

how might we...

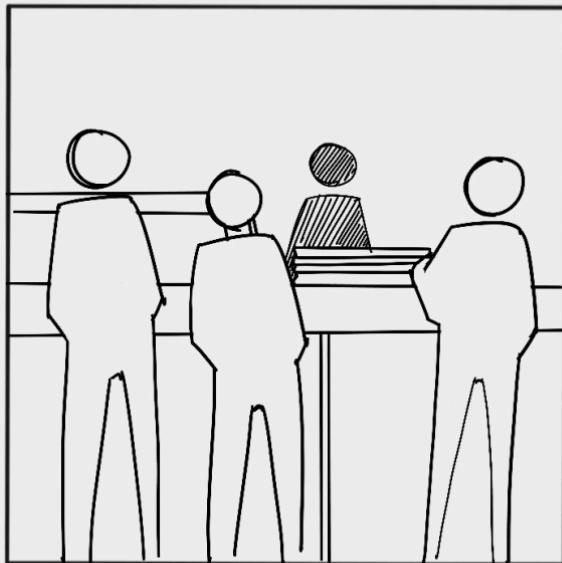
encourage the clients to **discover**
new ways of preparing **healthy foods**
through an exchange of **knowledge?**

1. proposed solution

recipe cards

Our proposed solution builds on the established communities and relationships between clients at food banks. By providing a platform for them to share recipes, we hope to encourage clients to choose and try produce and new foods they may be unfamiliar with. This solution utilizes the food trays and bulletin boards that are used by the existing communities in food kitchen. We propose that this idea

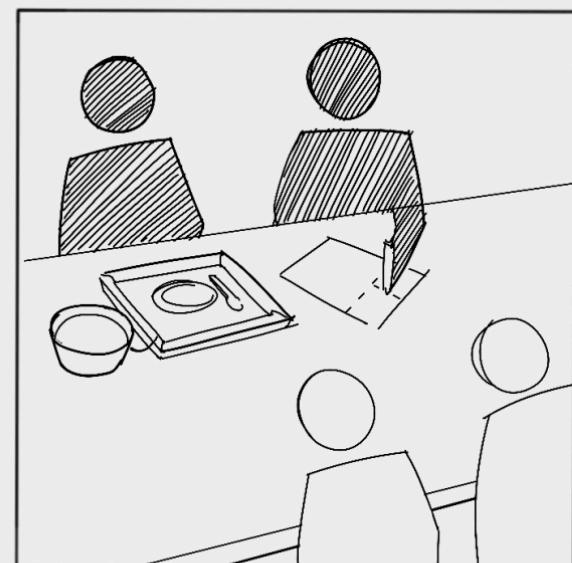
recipe cards



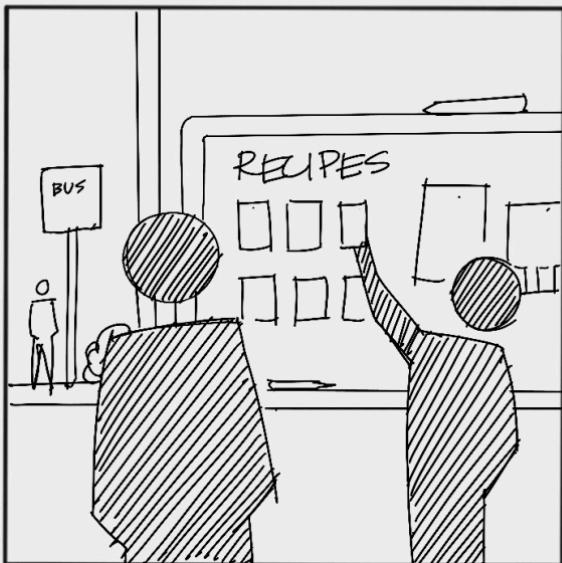
Gabrielle receives her tray of food from the soup kitchen and sees a printed news flyer on the bottom.



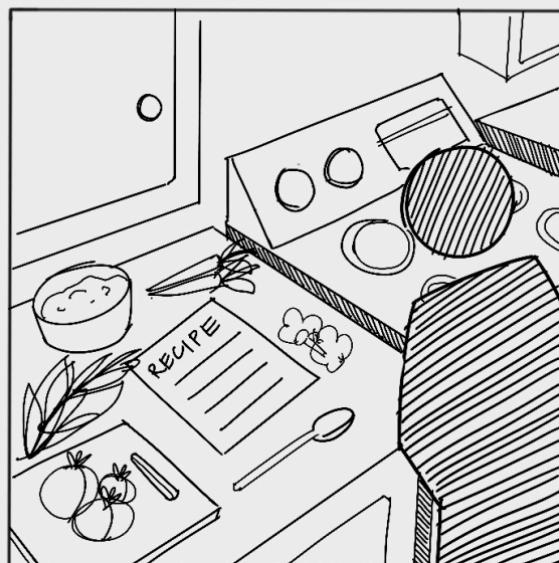
The flyer has some news and simple recipes printed on it, as well as an empty tear-off recipe card.



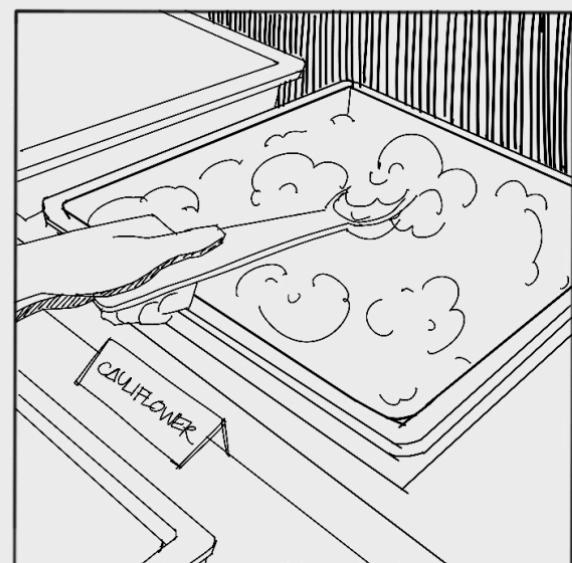
While eating, Gabrielle reads the news and then uses a pen at the table to fill up the recipe card with her favorite chicken and rice recipe.



She adds her recipe card to the others pinned up on the bulletin board before she leaves. She also takes a couple of cards with recipes that look interesting.



The next time she picks up groceries, Gabrielle remembers an interesting baked eggplant recipe she picked up from the bulletin board. She does not usually eat eggplants, but decides to buy some to try.



At home, Gabrielle follows the eggplant recipe and finds that her children really enjoy the dish. This encouraged her to try new foods, such as cauliflower, her next time at the kitchen.

how might we...

turn clients into **contributors** instead
of just being **benefactors?**

2. proposed solution

food bank co-op

Our second proposed solution is meant to provide clients of food banks to way transfer complete dependency back to grocery stores. We hope to provide them with operational work experience by volunteering at their food bank. This will provide sufficient volunteer help for the food banks, meanwhile, providing marketable skills for clients. This solution might help clients of food banks who are in need of work a way to get out of the cycle. In return for their work at the food bank, they will be given a giftcard to a local grocery store. These giftcards will be purchased with reallocated money from third party organizations (groups that typically donate during the holidays). After using the gift card to buy fresh

client co-op



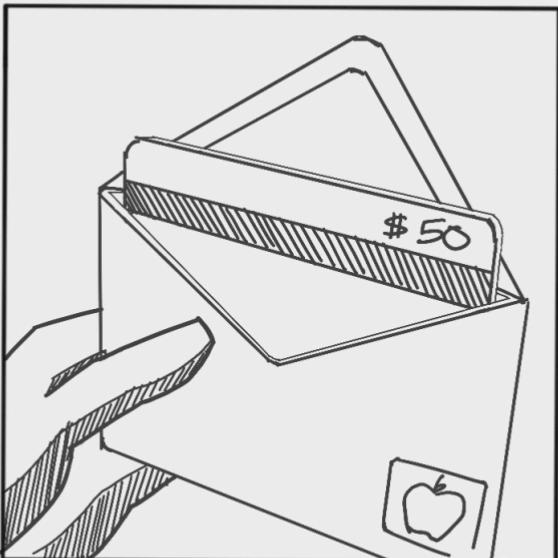
Tyler is visiting a food pantry for the first time in his life, having just lost his job and needing a way to make ends meet. He sees that the food pantry offers a client co-op program and decides to apply.



Tyler is selected for the program and receives training on how to help out the operations of the food pantry.



He now volunteers at the food pantry weekly, gaining experience in managing, distributing and taking stock of the produce available.



At the end of the month, he receives a Giant Eagle gift card for his contributions.



Tyler is overjoyed to be able to shop at a supermarket again, and afford the ingredients he wants to cook with.

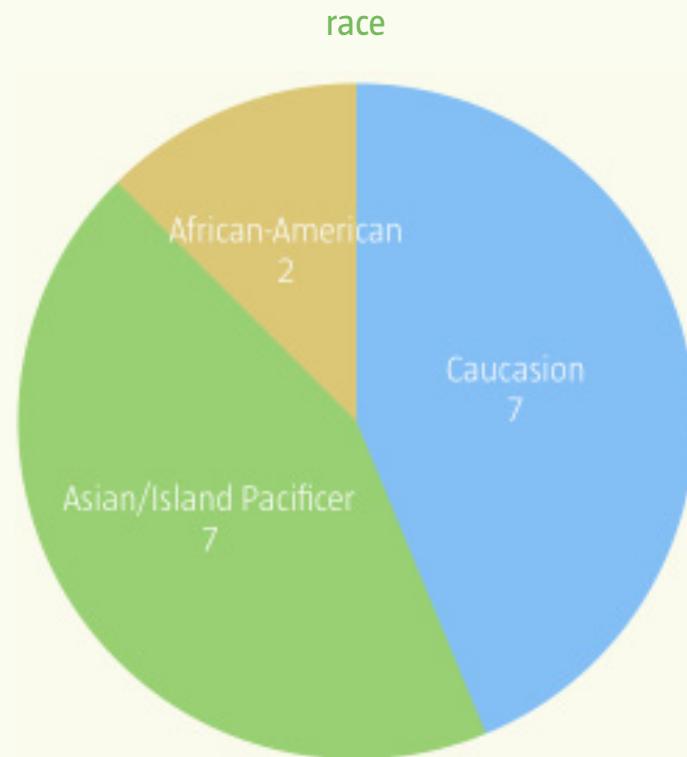
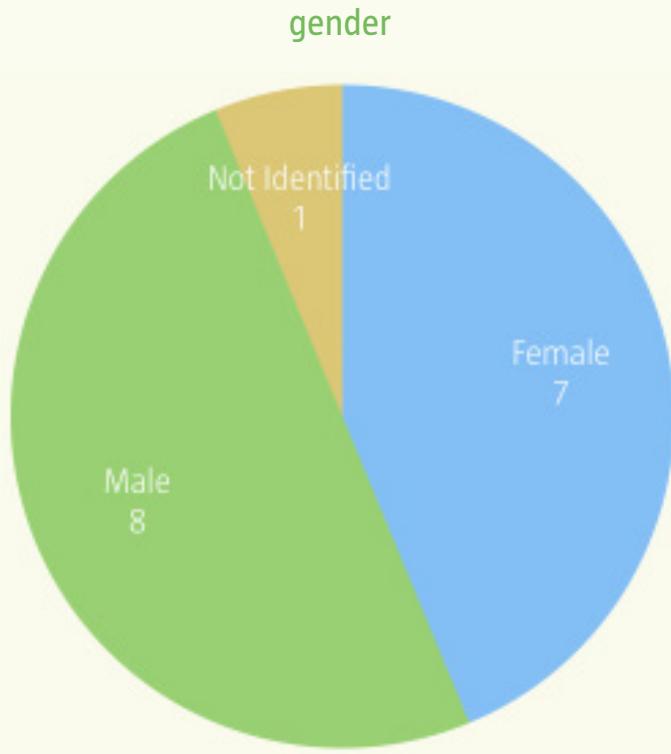


In turn, he provides the food bank with a receipt of his purchases to verify that the gift card was spent on food.

survey analysis

results · visualizations · key takeaways

results



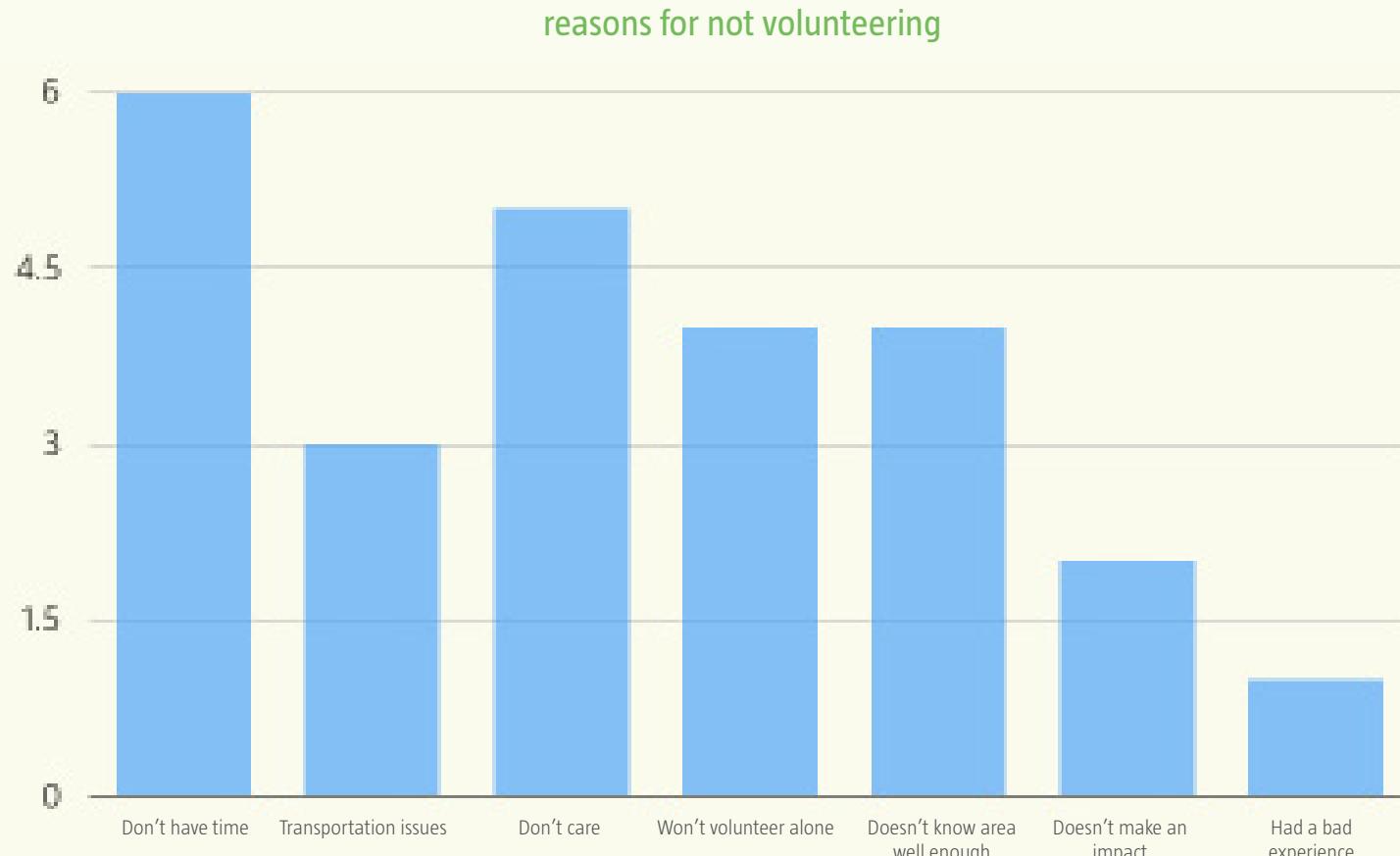
gender + race

We had a total of 16 participants, with a roughly even split between males and females. Asians/Pacific Islanders and Caucasians make up the two largest groups of respondents. In addition we had a very small number of respondents who identify as African-American.

college students

We did not have a visual for the reported age groups. All of our respondents fell under the category of being between the ages of 17 and 24 years old. This does not come as a surprise to us as we shared our survey with college students on the CMU campus.

volunteers



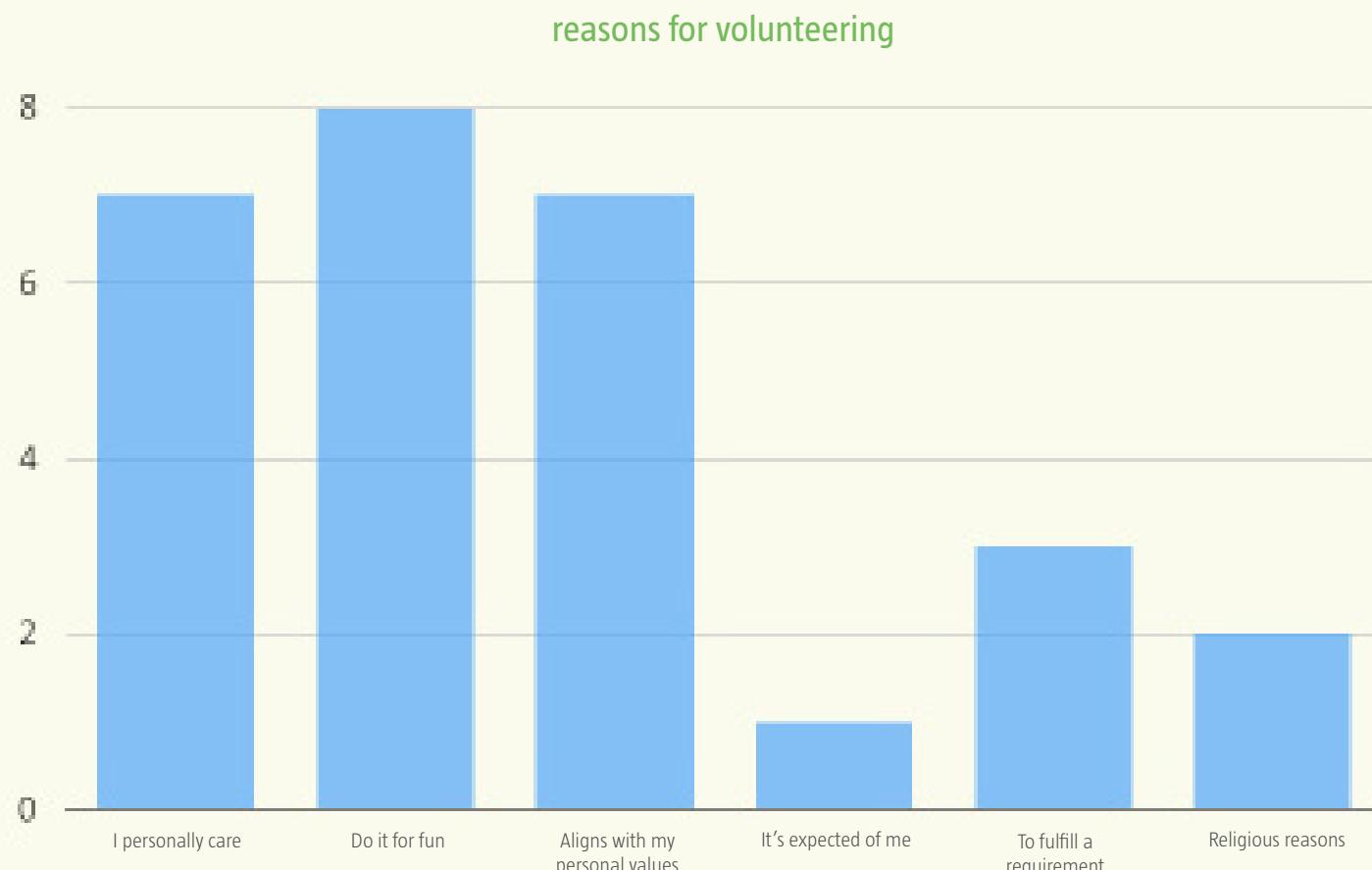
Our results show that exactly 50% of respondents volunteered in the past year. Respondents who did not volunteer in the past year answered most frequently that they do not have free time.

This answer aligns with our expectations given the state of CMU's stress culture. The majority of students have difficulty balancing extracurricular activities with their rigorous course load.

We were surprised to see that the second most popular reason for not volunteering was "I don't care". This is interesting to us. However, it's a problem that is very difficult to solve.

We could run an entire survey on this finding out more about this population. Making individuals care enough to volunteer spend is a difficult task and one without a simple solution.

volunteers

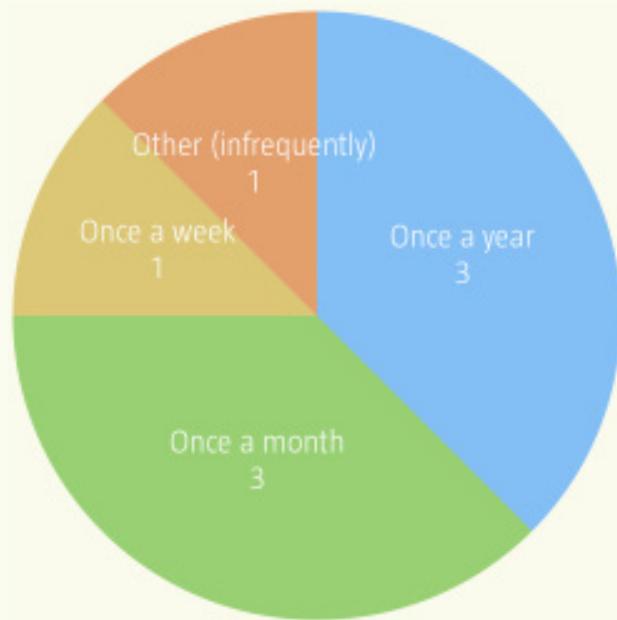


When people do care about something, they are more willing to contribute their time. Most of the respondents who volunteered cited that they enjoy volunteering as it aligns with their personal views, they care about the cause and do it for fun.

Having personal ties to the cause makes a big difference. When a cause makes a personal connection with someone's values and interests, they are more likely to get volunteers who are willing to take action and contribute.

volunteers

frequency



From our survey, we see that volunteering tends to take place once a month, once a year or infrequently; only one respondent volunteered weekly.

This suggests that regular volunteering is difficult to adhere to. Instead, individuals are more likely to volunteer occasionally, likely when their schedules can accommodate the time commitment.

social groups



Individuals who volunteer are likely to do so either alone or with an organization. People who feel strongly about a cause are likely to look for volunteering opportunities alone or join organizations with similar concerns.

Organizations can serve as a useful platform for individuals who care about a cause to organize and coordinate volunteer efforts.

donations



Our results show that people are more willing to donate money than volunteer for causes, with 75% of respondents having made donations in the past year. Respondents who did not donate in the past year commonly answered that they did not care, which reiterates the importance of inspiring people to care for a cause.

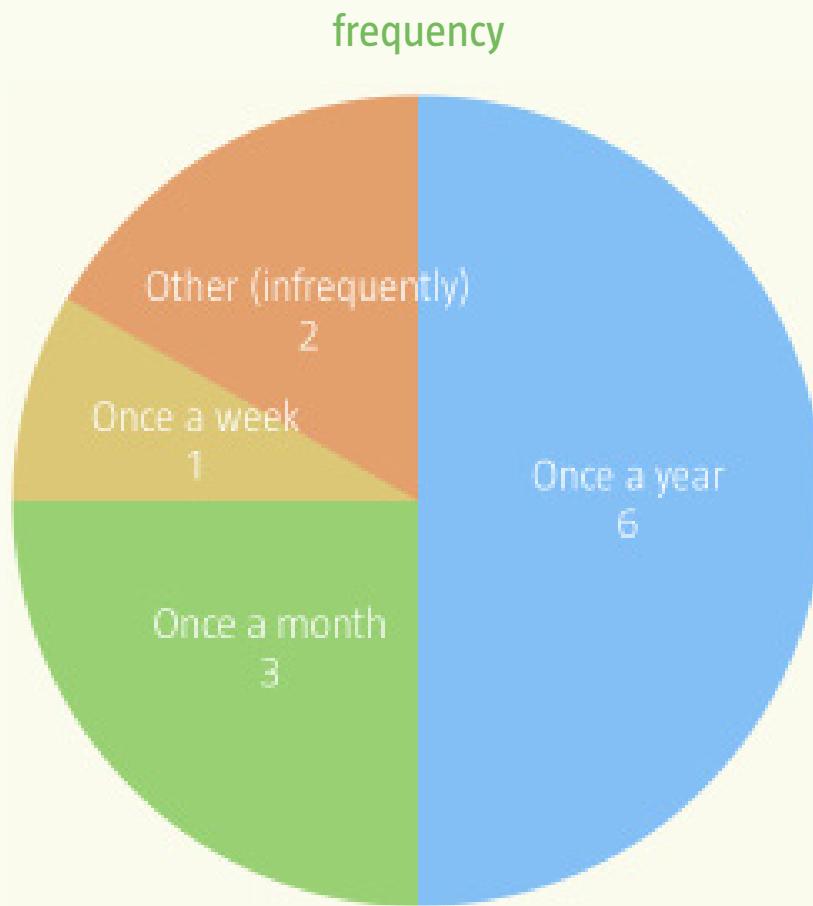
Another concern people have is that they do not know where their money is going. They fear that their donation will not make it to the people who are in need. Non-profit organizations can solve this by being transparently with how they are using funds. Providing some sort of tangible report would be helpful.

donations

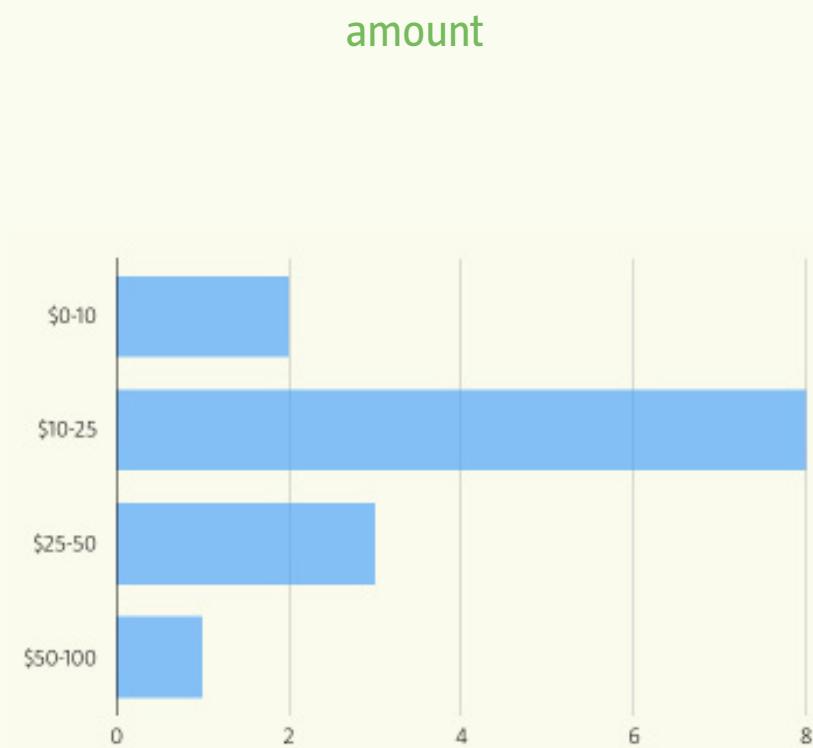


Once again our survey showed that care for a cause is the greatest motivator, with 11 of the 12 respondents who donated citing their care for the cause as the reason for doing so. Other common reasons for donating include influence from others and simply being able to afford it.

donations



50% of donations happen once a year while 25% take place once a month. It is uncommon for respondents to donate any more regularly than that. This is within expectations, since the majority of college students have a limited income that makes it difficult for them to donate too frequently.



The majority of donations are within the \$10-\$25 bracket, with a small number of individuals donating above that. We expected to see this range given the limited income of most college students. It is of note that for individuals donate more frequently (several times a year), even \$10 per donation will make for a significant contribution over the course of a year.

volunteers

1. Volunteers want to help causes that align with their **interests or personal values**.
2. People **prefer to donate money** over the idea of volunteering even though they do not donate regularly or in large amounts.
3. Organizations should **be more transparent** about how donations are being spent.

volunteers

Food pantries and food banks need support and understanding from the greater Pittsburgh community.

A steady source of produce and funding for most food banks and food pantries come from the Greater Pittsburgh Food Bank, but with more than 260 member organisations, it is sometimes a competition to obtain food items that have a limited stock. While there are other sources available to food banks and food pantries, these have their own challenges.

The resources that food banks and pantries have are usually insufficient or unreliable. Organizations accept donations from the public but find that they can never really predict the type or frequency of food that they will receive.

Funding is also a big challenge and is a misunderstanding about what these organizations really need. Mel, from the CHS food pantry, says that “the general narrative about what it means to donate food to food pantries are those canned goods...[but] money is able to go further at food pantries.” Furthermore, the outcomes of their work are difficult to quantify, and there is no revenue generated. Mel says: “There is no way to tell that story”.

From A Menu for Food Justice (Page 9): “The importance of community is a shared value across sectors in the food system. Justin Pizzella, general manager of the East End Food Coop, says that... with food access there are ‘a number of overlapping issues like child-care and transportation. We have to find the people in the community who work on those issues and bring them to the table.’”

Running a food bank takes a lot of manpower and planning. Food banks have a systematic way of rationing food to clients, documenting information about them in the process. Keeping these operations running requires the support of the greater community in the form of manpower and time.

Fortunately, most food banks and food pantries have no trouble finding volunteers. St Paul’s food pantry requires 6-8 volunteers each Friday, and as Tom puts it, “volunteers just show up”. The CHS food pantry has “a good relationship with the surrounding universities”. At food pantries and food banks, volunteers are valued and indispensable.

The entire community has to be involved in order to solve the problem of food accessibility. There are many high-level issues beyond poverty that need to be addressed in order to eradicate food accessibility problems. Mel thinks that “poverty is such a big, dense, interconnected web of social issues... just handing someone food is not... solving any problems.”

Actual solutions will require the effort of people at all levels of power, but Mel is hopeful about this happening. She knows that “the change can’t happen overnight, but I think there are really a lot of outstanding organizations in Pittsburgh that are working very hard to bring high-quality, healthy foods to everyone.”

From A Menu for Food Justice by JustHarvest (Page 6): “...organizations in [Homewood] like HCV, Bible Center Church, and the YMCA are focused on “providing healthier options in Homewood while stressing community based ownership of the experience. It’s really about the whole community. This approach recognizes the importance of the community’s voice and participation in the development of any new program or initiative in Homewood.”

key problems

Improve food education by leveraging the communities at food banks.

Improving food literacy across the community and encouraging people to consciously pick healthier options remains a challenge. Food pantries have found that customers avoid fresh produce that are unfamiliar or look unappealing.

At the same time, one-on-one sharing of simple recipes has been found to be the effective way of introducing customers to unfamiliar ingredients. It is worth exploring how this can be built upon and scaled up by leveraging the communities at food banks and food pantries to improve food literacy and encourage customers to choose fresh produce.

Reduce customer dependency on food banks in the long-term.

Most customers of food banks have been coming frequently for long periods of time. Some of them have difficulties finding work to support themselves, while others have simply become accustomed to obtaining food from the food bank.

This causes some staff members to be concerned that these able bodied individuals are no longer part of the workforce even though they can still take on a job.

Reducing dependency on food banks is a challenge that needs to be solved, but it is a multi-faceted problem. For customers to support themselves independently, they will need help developing the skills and experience needed to return to work.

looking forward

future plans · highest priorities

Given the time constraints, we did not have a chance to test out our interventions for feedback.

Client participation is critical to carrying out our ideas. With another month to work on this, we would have liked to return to the food pantries and kitchens to gather customer feedback about these interventions.

We would have liked to try the proposed ideas with volunteers and clients to find out how we could make them better. We want the ideas to be appealing, feasible, and beneficial for all parties.

highest priorities

Improve food education by leveraging the communities at food banks.

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appendix

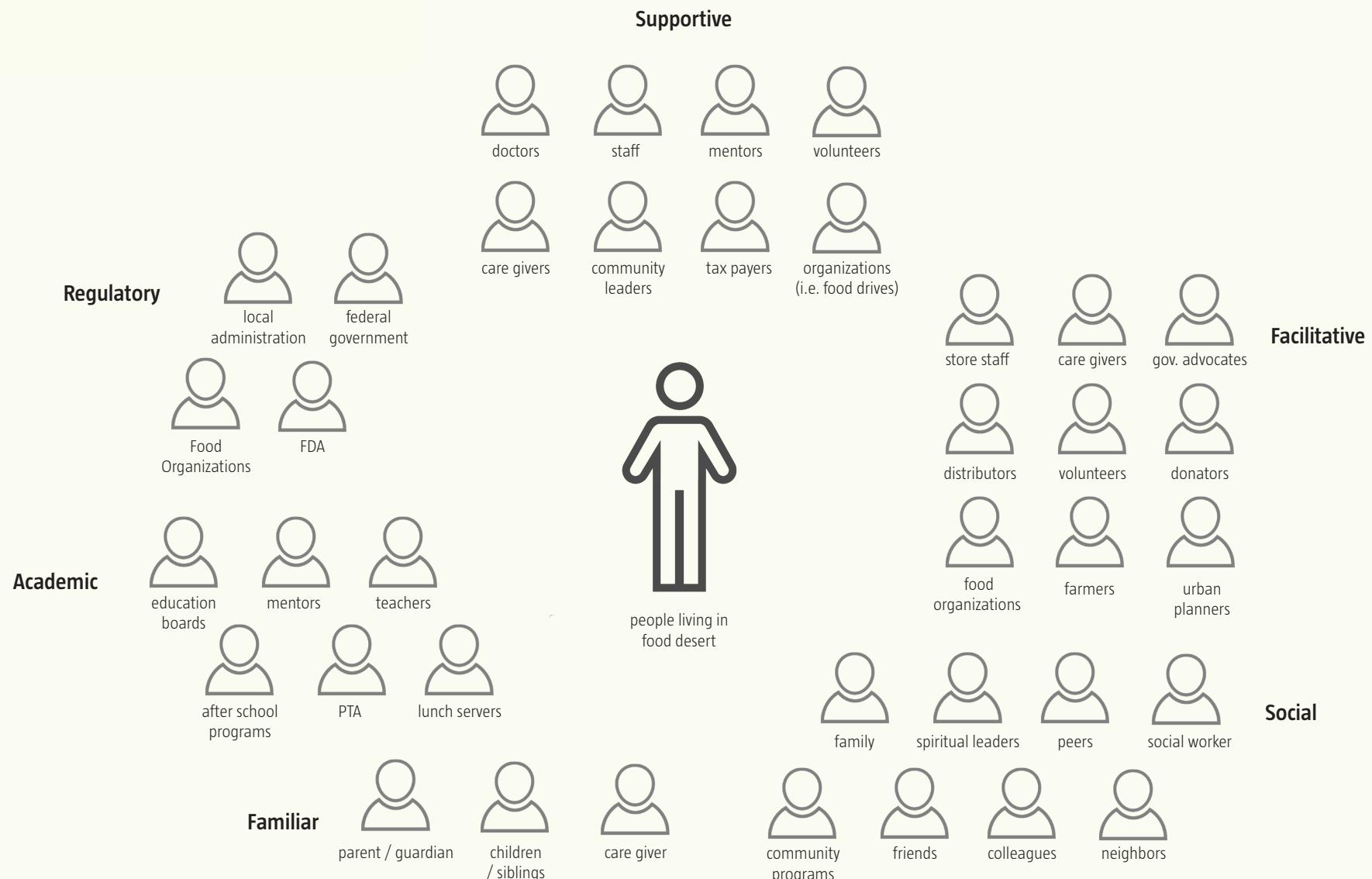
The bulk of this section documents our research models, guides and tools.

Showcased are the stakeholder maps, field guides, tools, contextual models, affinity diagrams and more.

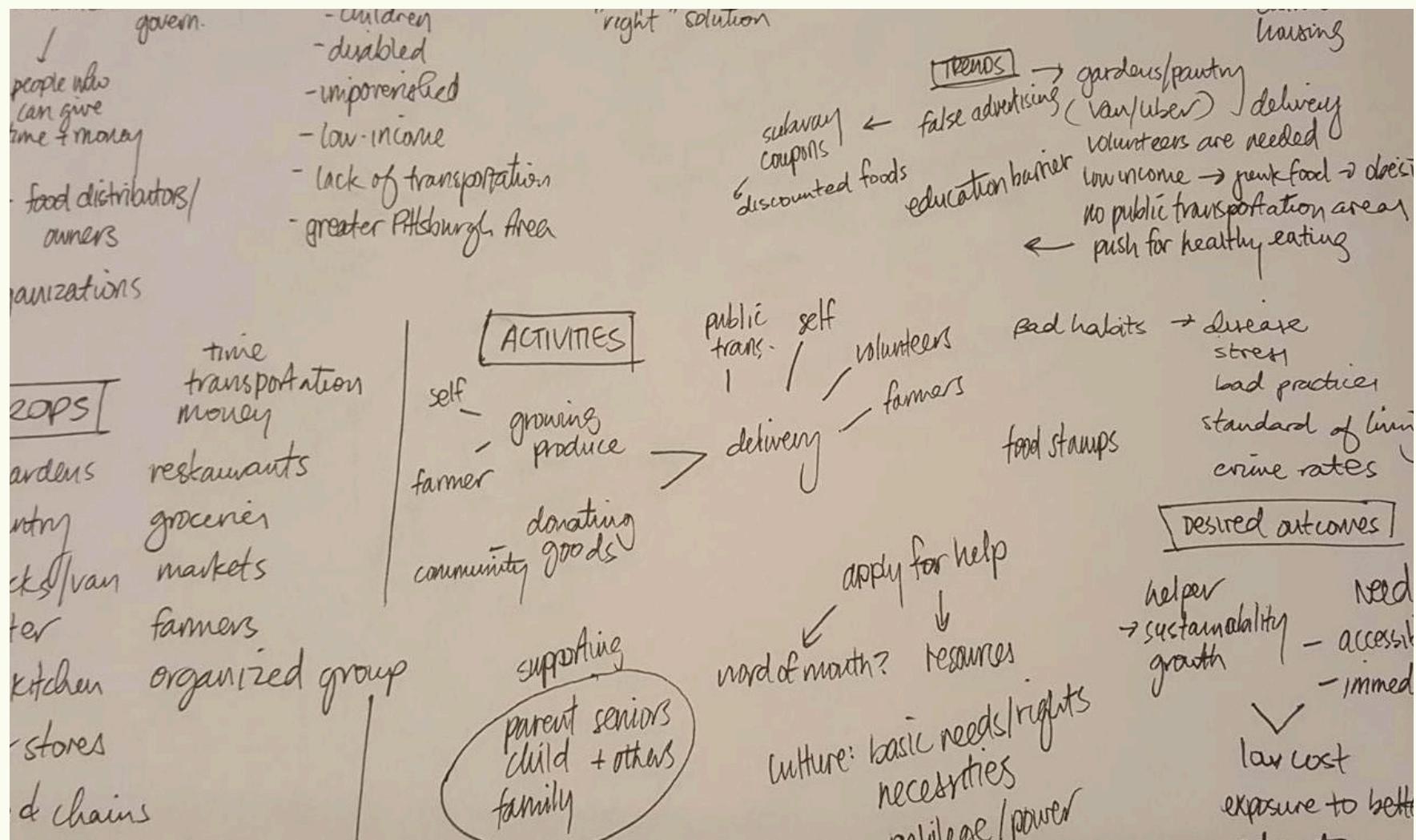
research methods

stakeholder map · participants · field guide · data collection tools

stakeholder map

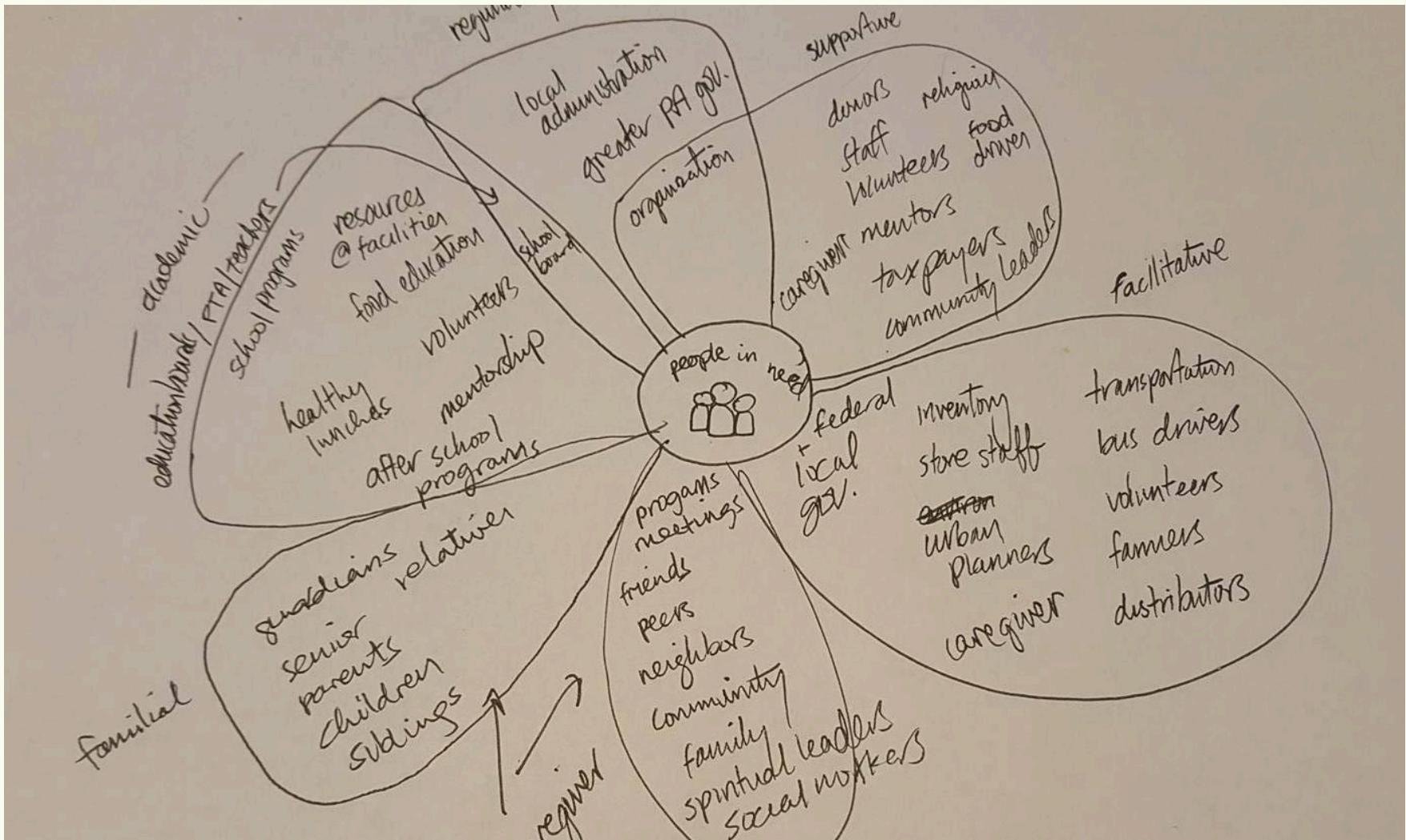


process



Brainstorming the Ecosystem Map

process



Rough Sketch of Stakeholder Map

participants

Who are you interested in interviewing?

We want to interview low-income families and individuals living in the SouthSide Slope area.

What age group is your audience?

Any person who is old enough to do grocery shopping

What are important questions to ask?

- How do people get their food?
- What are challenges they face?
- What do they eat? Why and how?
- What transportation do you use?

Contacted Organizations

CHS Oakland Community Pantry

370 Lawn Street
(412) 246-1686

Jubilee Food Kitchen

2005 Wyandotte Street
(412) 261-5417

Henry Kaufmann Neighborhood House

2201 Salisbury Street
(412) 431-0557

St. Paul of the Cross Monastery Food Bank

148 Monastery Ave
(412) 381-1188

Bandi Schaum Community Garden

2132-2172 Mission St
bandischaum@gmail.com

field guide

Introduction

Our goal is to learn about food accessibility in SouthSide Slopes, Pittsburgh. We want to understand how clients regularly obtain their daily food (meals or groceries). We'd like to gain in-depth knowledge about the challenges faced by those in food deserts.

Timeline

Introduction (1-15 minutes), **Drawing** (15-30 minutes)
Make Tool (30-45 minutes), **Interview** (45-90 minutes)

Activities

Drawing Activity: collaborative drawing worksheet that outlines a shopping cart/grocery bag, where participant is encouraged to draw what groceries they eat (not specific to source)

Make Tool: give participant a map of Pittsburgh and icons to show us in real-time the steps they go through to receive their food

Questions

How do you currently get food for yourself?
Do you provide food for others?
Where do you travel to obtain food?
What transportation do you rely on to get food?
What challenges do you face during your journey?
Do you know of initiatives that tackle food insecurity?
How often do you get groceries?
How do you decide what foods to get?
Do you like to cook?

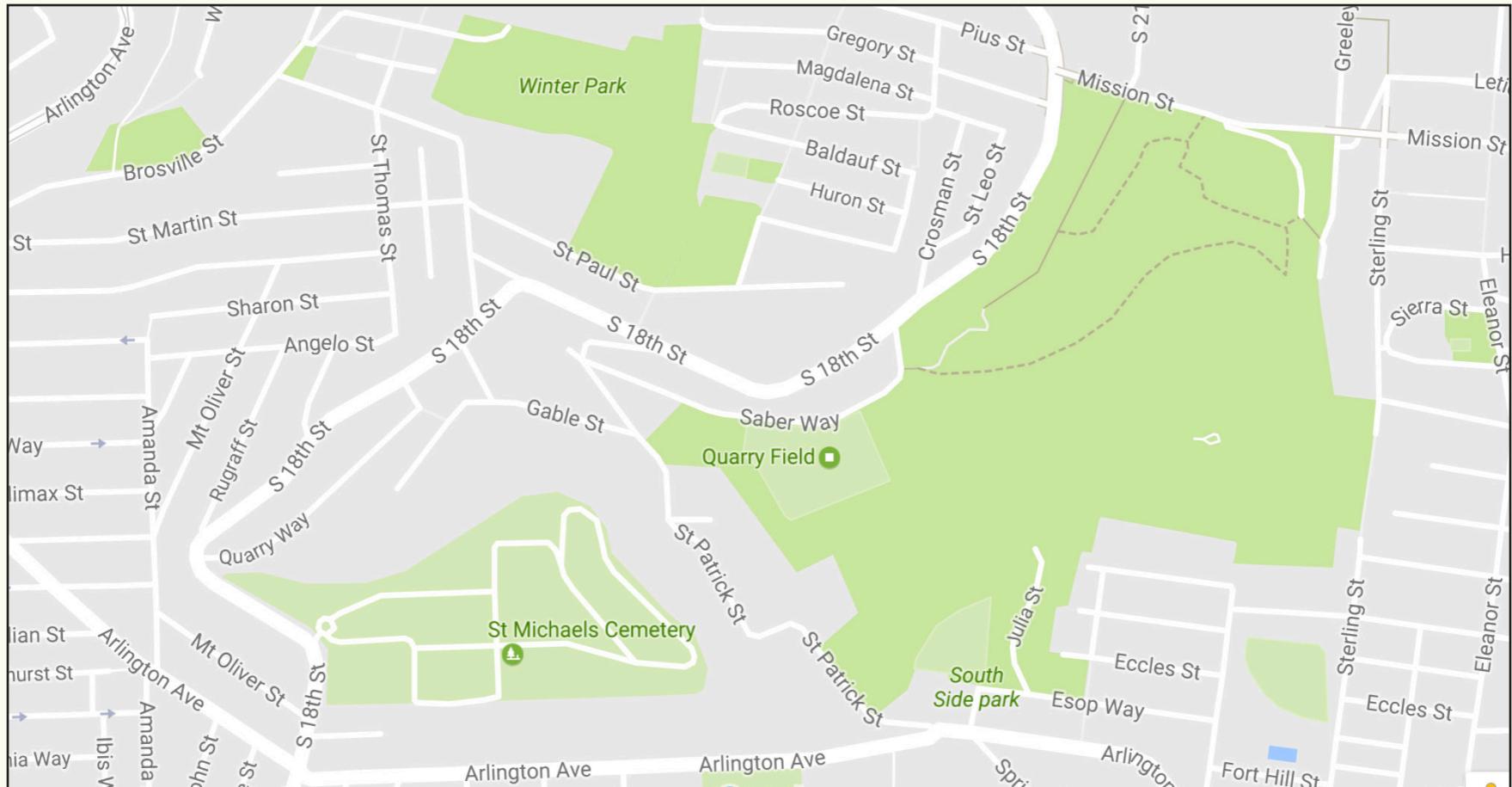
Reminders

Do not make assumptions about their situation.
Ask questions in a non-biased manner.
Be considerate of their time and space.
Have a positive outlook and be polite.
Thank each person for their time.

Checklist

- | | |
|--------------------|------------------|
| — Diary | — Worksheet |
| — Stamped Envelope | — Markers |
| — Video Recorder | — Notepad + Pen |
| — Consent Form | — Map + Stickers |

groceries map



On this map, please mark your journey to get food from beginning to end. You can use the provided shapes/items to tell your story on the map and verbally. Use the ! to mark painpoints or challenges you experience throughout your journey.



diary study

This diary study will be presented to the participant as a book. They are asked to jot down the meals they eat over the course of a week. We provide them with an addressed envelope to send back to us.

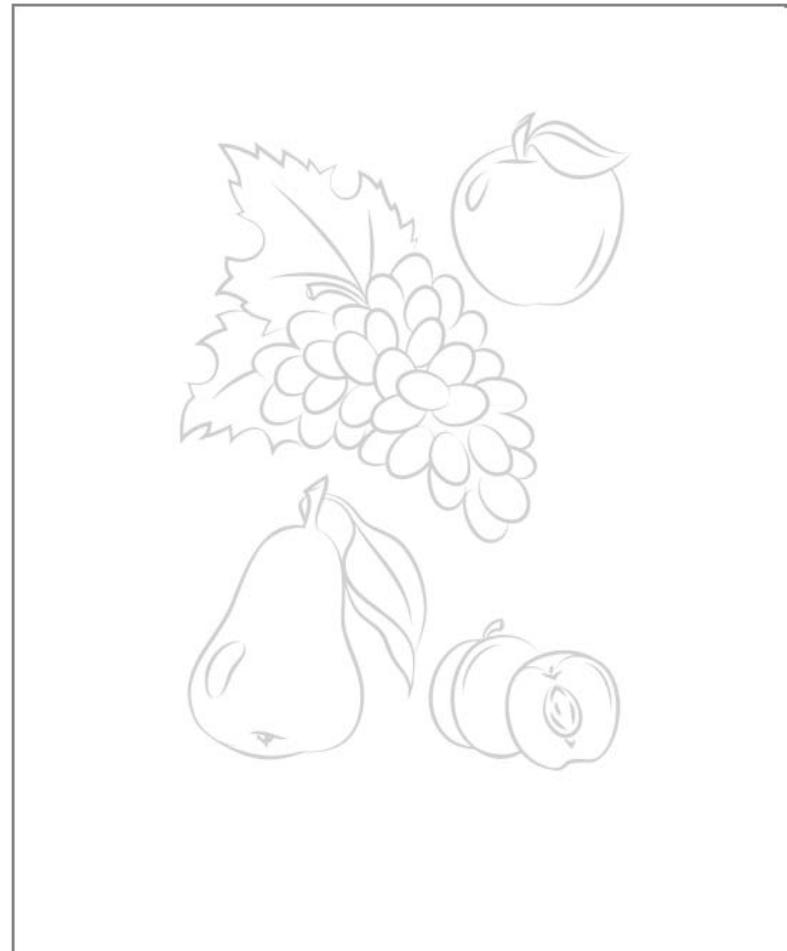
DATE:

Today I ate:

Today I bought groceries:



Help us by attaching any receipts you kept here:



food journal

During the interview, we will ask participants to fill out this journal with us. We would like them to get creative in this activity. Our goal is to learn more about their daily meals and general nutrition.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
BREAKFAST						
LUNCH						
DINNER						

consent form

Interview Consent Form

I agree to participate in the Food Accessibility study conducted by:

Jenna Date, Adjunct Faculty, HCII, CMU

412-414-3529

Maggie Banks
Carnegie Mellon University
Human Computer Interaction Institute
Pittsburgh, PA
(913) 687-7903

I understand that the information and video/audio recording is for research purposes only
and that my name and image will not be used for any other purpose.

I understand that I may withdraw at anytime without penalty

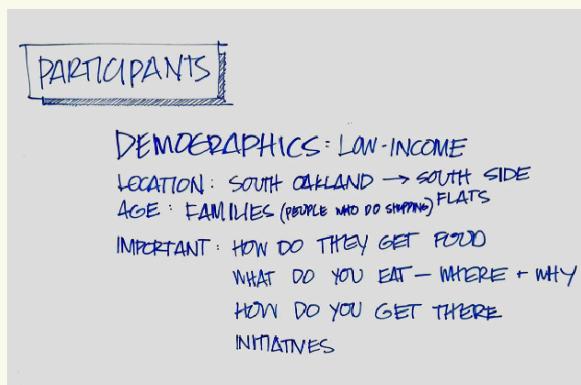
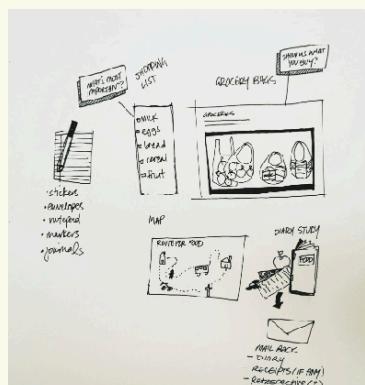
Signature

Date

research planning process



Meeting to plan our research and call our possible interview participants



Determining the desired demographic for our study and designing interview tools through sketching

interviews

Jubilee Food Kitchen · CHS Pantry · St. Paul's Food Bank

jubilee kitchen

Jubilee Kitchen was established 36 years ago to help feed the poor and has been open every day since.

The kitchen now provides additional services including economic counseling and day care. We interviewed the director of Jubilee Kitchen and talked to two customers.

jubilee food kitchen



CHS food pantry

The CHS Food Pantry works to provide food to families and individuals who need it the most. They serve all individuals in Pittsburgh and provide medical care for clients as well. We interviewed Mel Cronin, Community Programs Coordinator at the pantry.

CHS food pantry



affinity diagram

Affinity diagrams are a tool used to parse through the findings we collected in the field. By cutting out individual research findings from transcripts and interviews, we were able to arrange and organize the information. Insights begin to surface as the data is organized and categorized by topic and similarities. We used these multi-tiered insights to determine criteria for possible design opportunities and solutions.

st. paul of the cross food bank

St. Paul of the Cross runs a food bank that is open every Friday where clients from all neighborhoods are welcome. We interviewed four clients of St. Paul of the Cross and also spoke with its directors. In order to learn more about their operations and clients, one of our team members volunteered for two fridays following the interview.

St. Paul's food bank



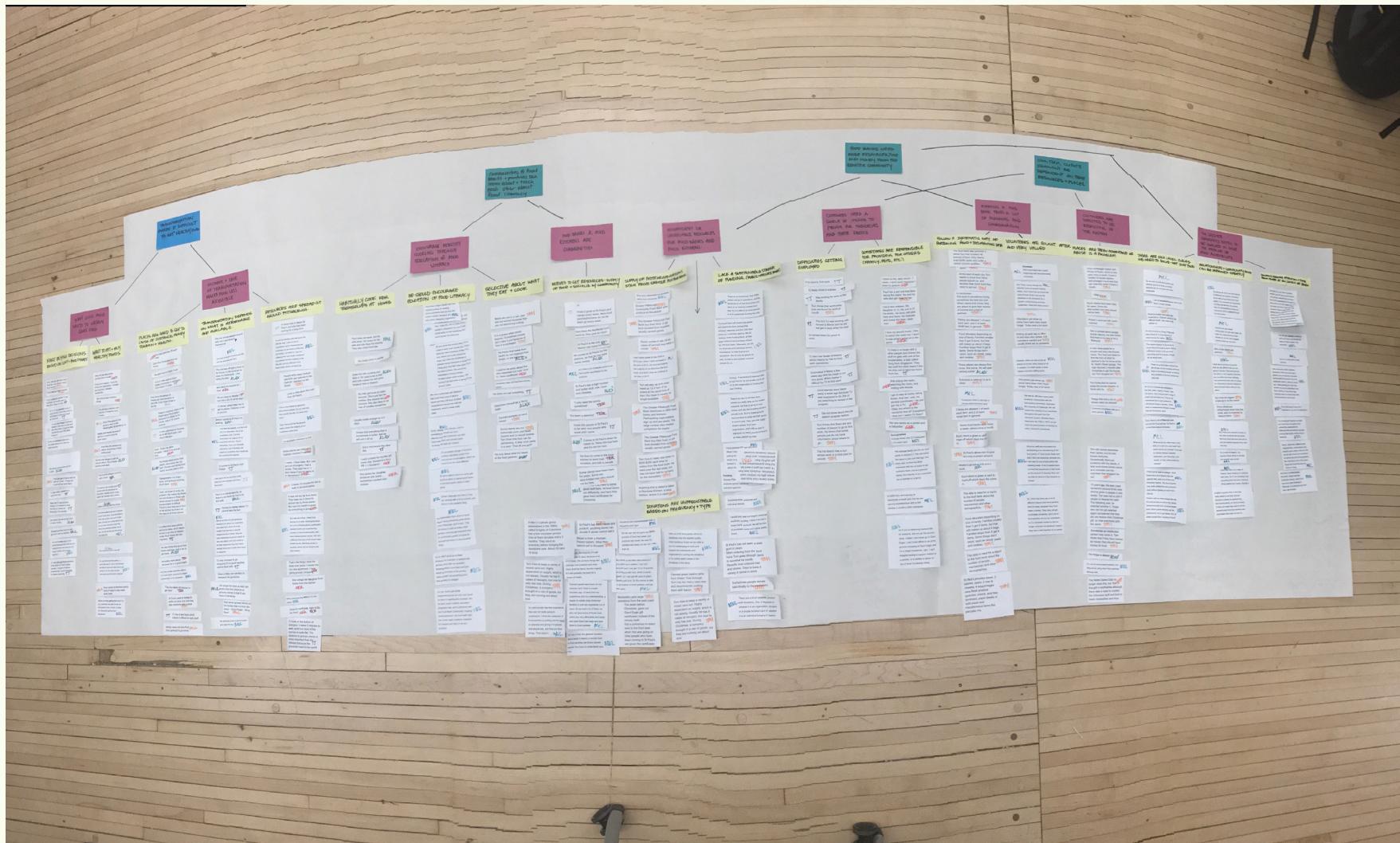
Greater Pittsburgh Community Food Bank						
Order# 372932						
Agency: PSTP1057-1 - St. Paul's Monastery	Order Status: Waiting to be Reviewed	Order Placed: 10/2017	Warehouse: 01 Greater Pittsburgh Community Food Bank	Shipping Method: Pickup	Delivered/Picked Up: 1/5/2017 At 10:00 AM	Deliver/Pick Up Location: Agency Dock Area
Product Ref	Product	Type	Category	Quantity	Weight	Unit Measure
PF74298	Bacon, Applewood Smoked	15-Meat/Fish/Poultry	PUR	2	.36	Case
PD79152	Bath Tissue	19-Paper Products-Household	PUR	1	.20	Case
PD70318	Bearns, Baked Beans, Maple	23-Hom-Made Protein	PUR	2	.48	Case
DKY1990	Carrots, Fresh, 16 x 3 lbs bags	26-Produce	DON	1	.48	Case
SD74218	Cereal, Frosted Mini Spoons	26-Cereal	SRPP	2	.34	Case
SD73487	Cereal, Raisin Bran	26-Cereal	SRPP	2	.34	Case
CD74248	CSFP, Box January 2017 Seniors 16-Month Renewal	CSFP	6	.50	Case	
	bif null					
SD70015	Dairy, Milk 1%, Shelf Stable	07-Dairy Products	SRPP	2	.54	Case
PF73814	Fish, Pollock, Skinless Filets	15-Meat/Fish/Poultry	PUR	2	.34	Case
SD70070	Fruit, Peaches, Sliced in LS	12-Fruits	Concentrated	2	.50	Case
PD70220	Juice, Apple Juice	14-Juice	PUR	3	1.11	Case
DKT1889	Onions, Fresh 16 x 3 lbs. Bag	28-Produce	DON	1	.48	Case
PD79100	Paper Towels	19-Paper Products-Household	PUR	2	.26	Case
PD70977	Pastas, Egg Noodles	21-Pasta	PUR	4	.42	Case
PF74281	Poultry, Chicken, Dressings, B/S	15-Meat/Fish/Poultry	PUR	2	.30	Case
DD70984	Salsage, Cerv. Mixed Varities	16-Mixed/Unknown	DON	2	.80	Case
SD71983	Sauces, Spaghetti Sauces - Low Sodium	26-Condiments	SRPP	2	.54	Case
Totals:				39	891	
Grants Applied:				\$2.00	Payments:	\$0.00
Balance:				\$140.80		



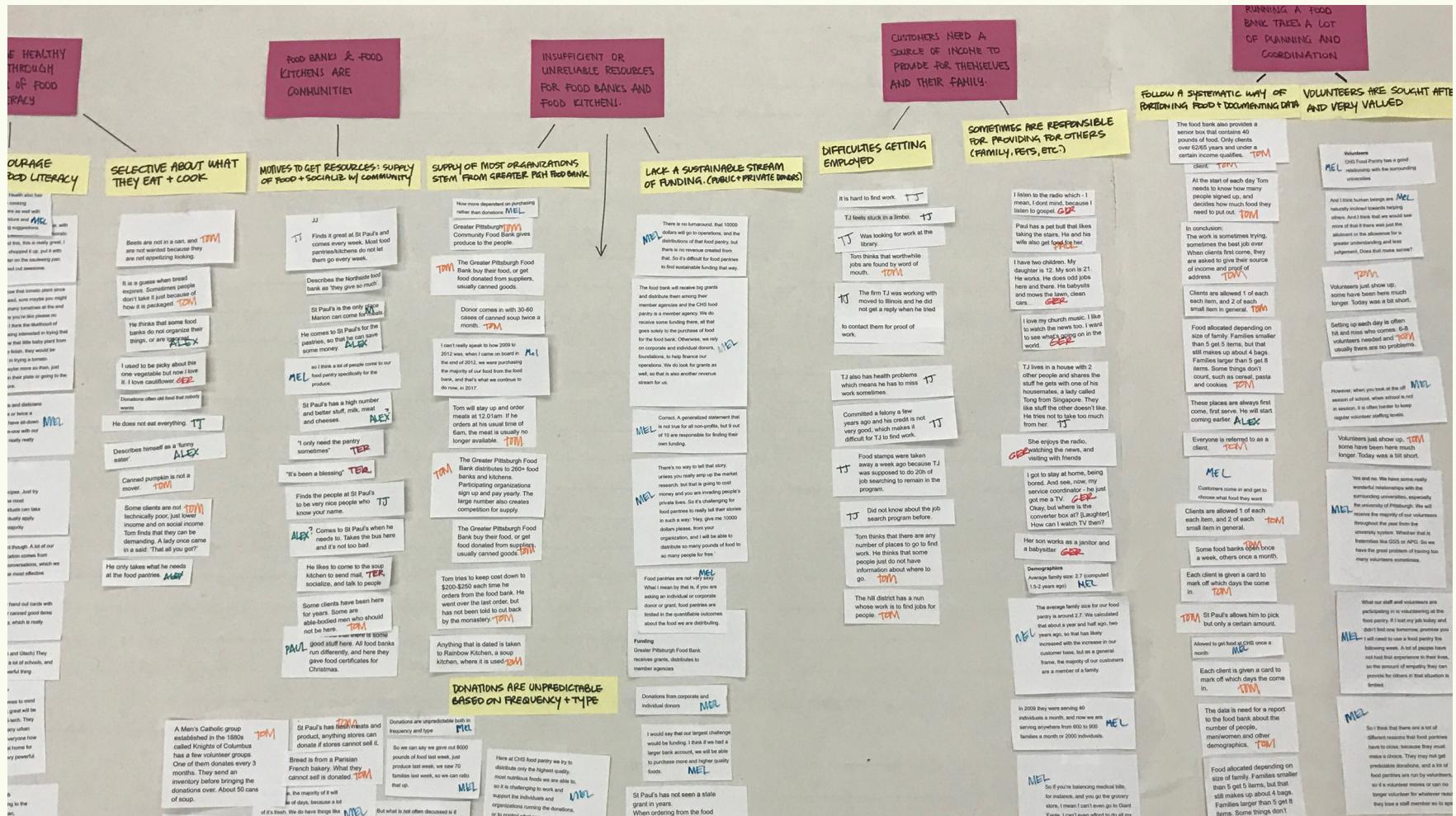
diagrams + models

affinity diagramming · flow, physical, contextual models

affinity diagram

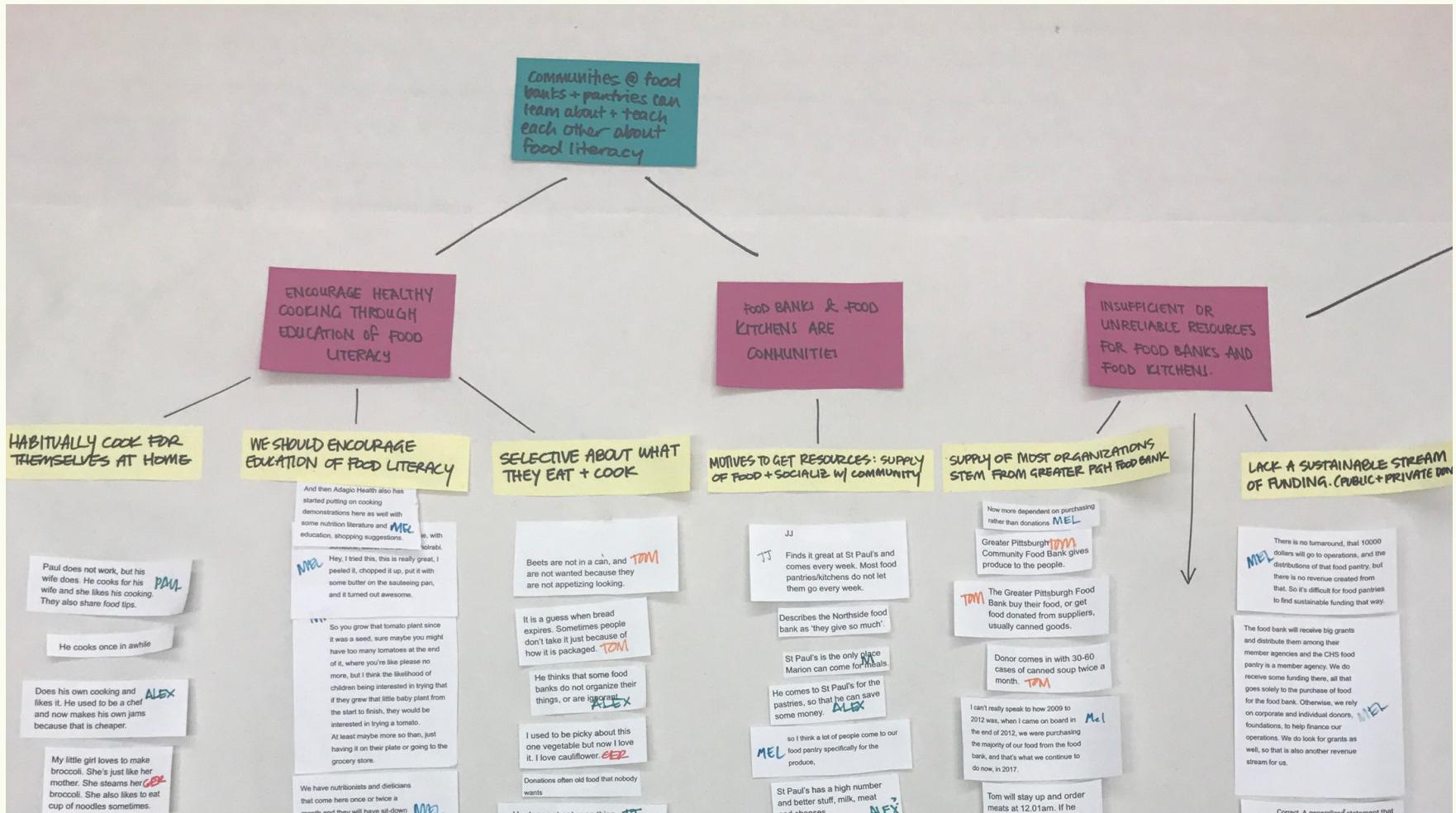


affinity diagram



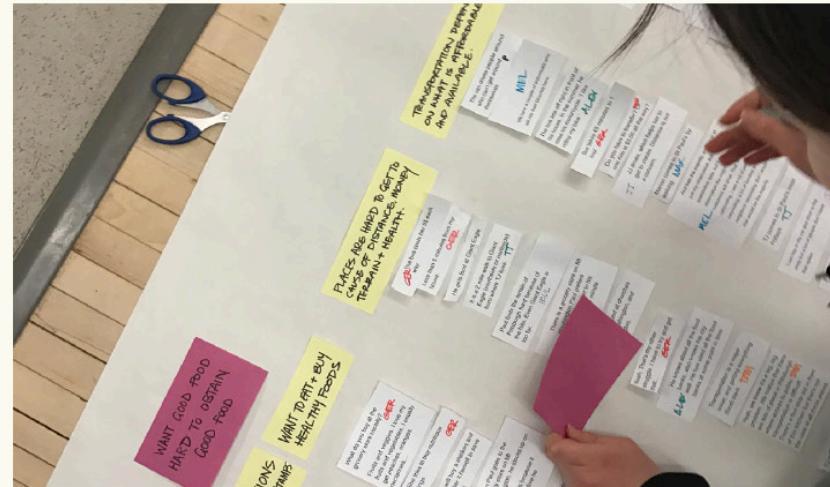
As a group, we trimmed the transcriptions from our interviews into **individual quotes**. From there, we grouped each one into sections, providing a label for each category. This helped us understand the **overall themes and problem areas found in each section**. For example, one of the yellow labels read: "Donations are unpredictable based on frequency and type".

purpose



The **blue labels** represent our most important findings overall, taken from the quotes. The text found there outlines the key takeaway for us to focus on moving forward as we start to think about design interventions. The **magenta categories**, one section below, offers other important insights that continue to focus on the big picture.

affinity process

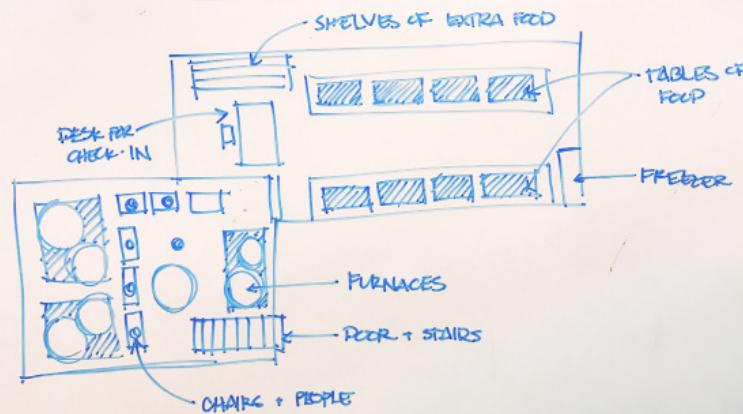


CI models

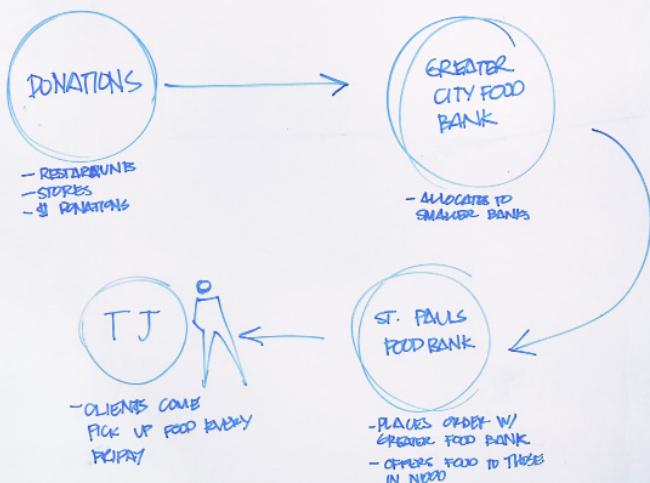
Contextual inquiry models are models that help us look at the data we gathered from each individual from different perspectives. In so doing, we understand the data we gathered more deeply, gaining a sense of how the data interacts with and affects the customers.

models: tyler

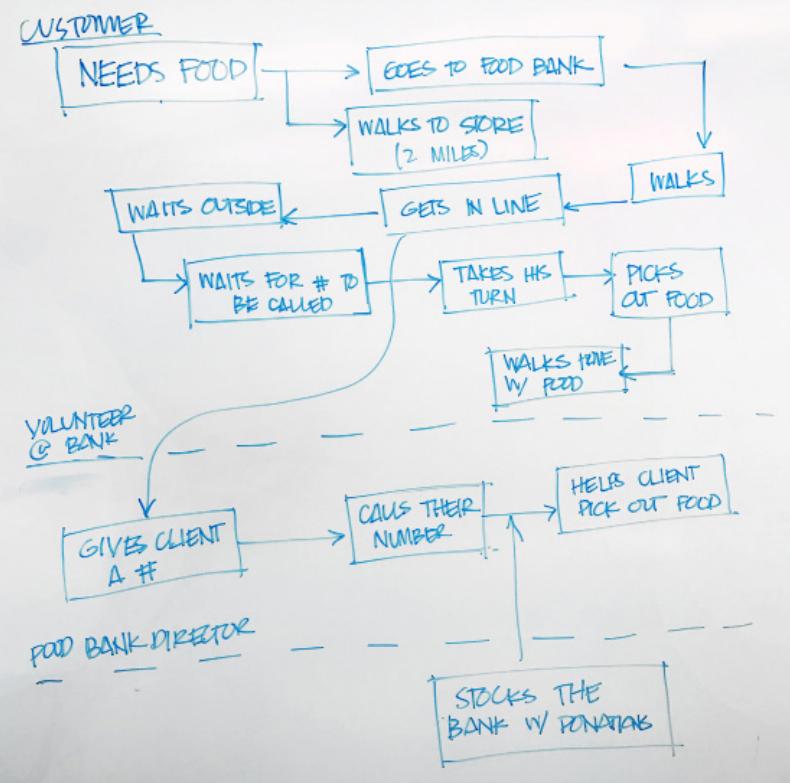
PHYSICAL MODEL



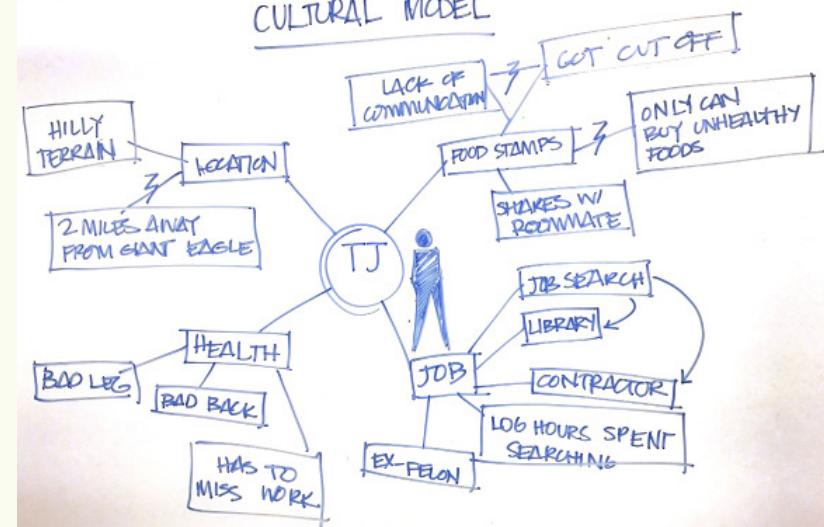
FLOW MODEL



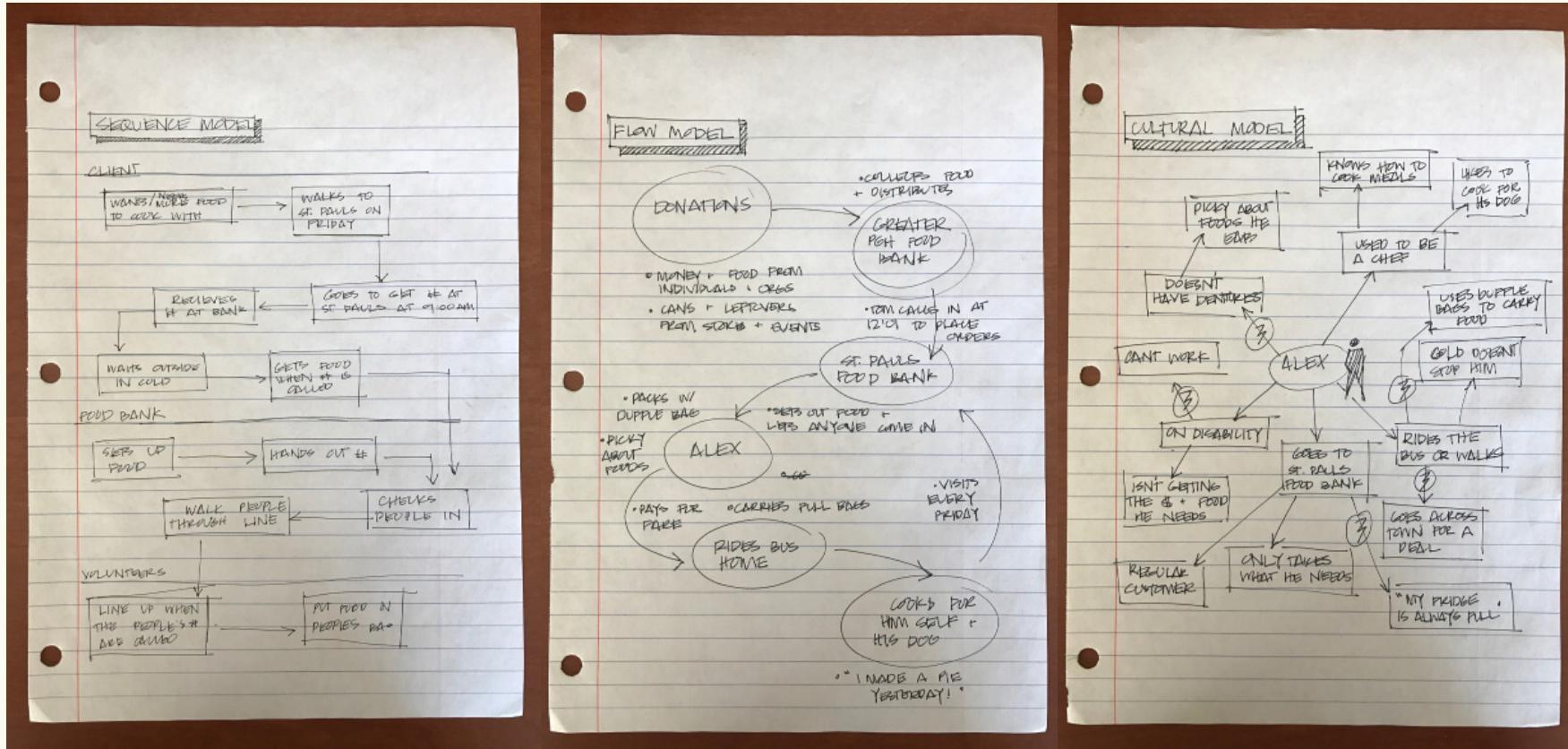
SEQUENCE MODEL



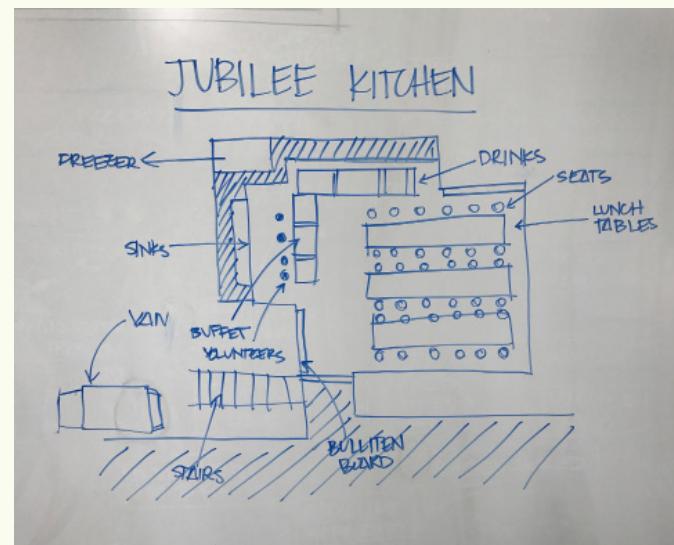
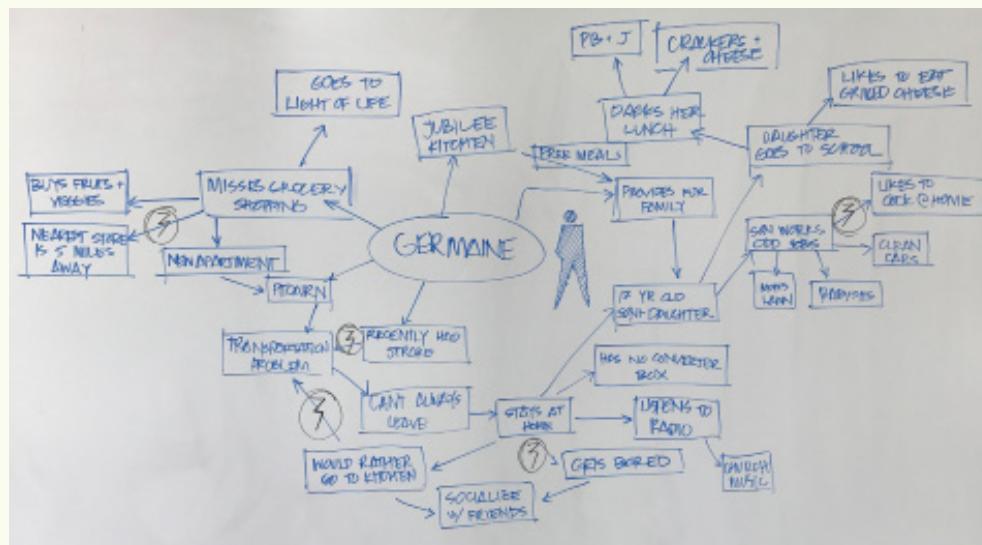
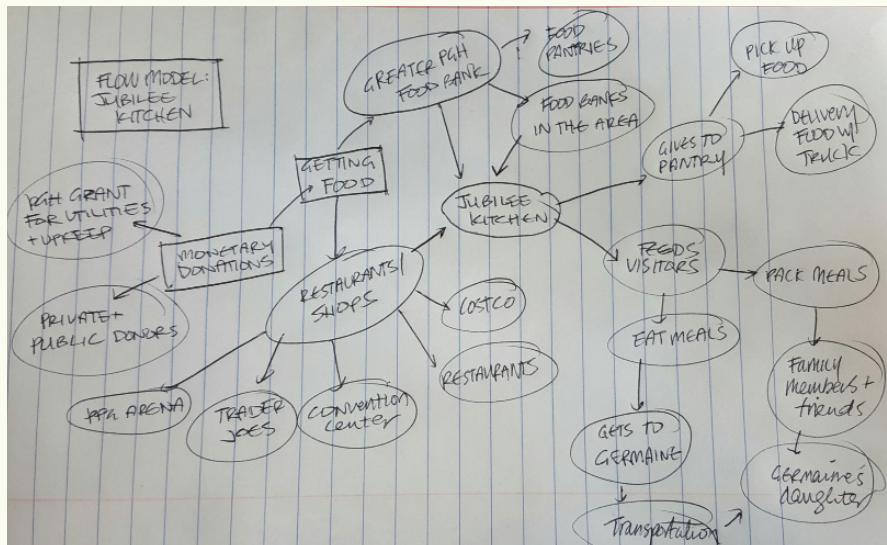
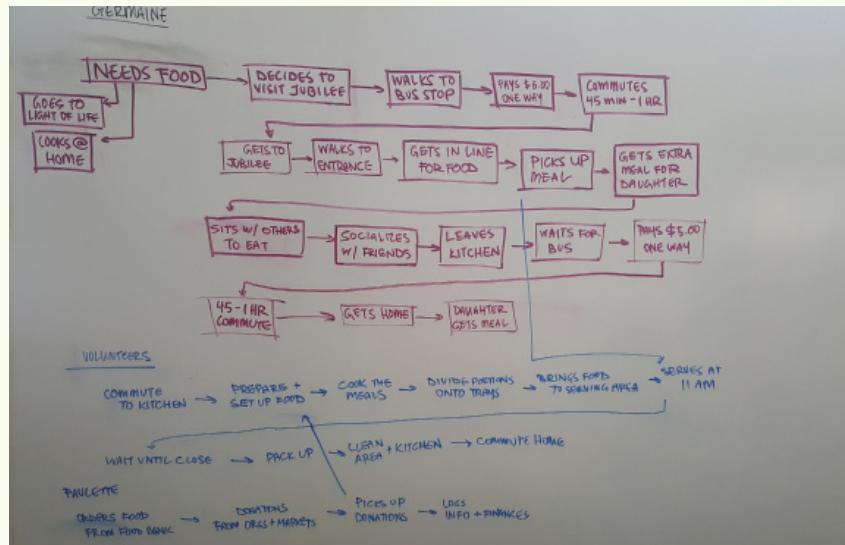
CULTURAL MODEL



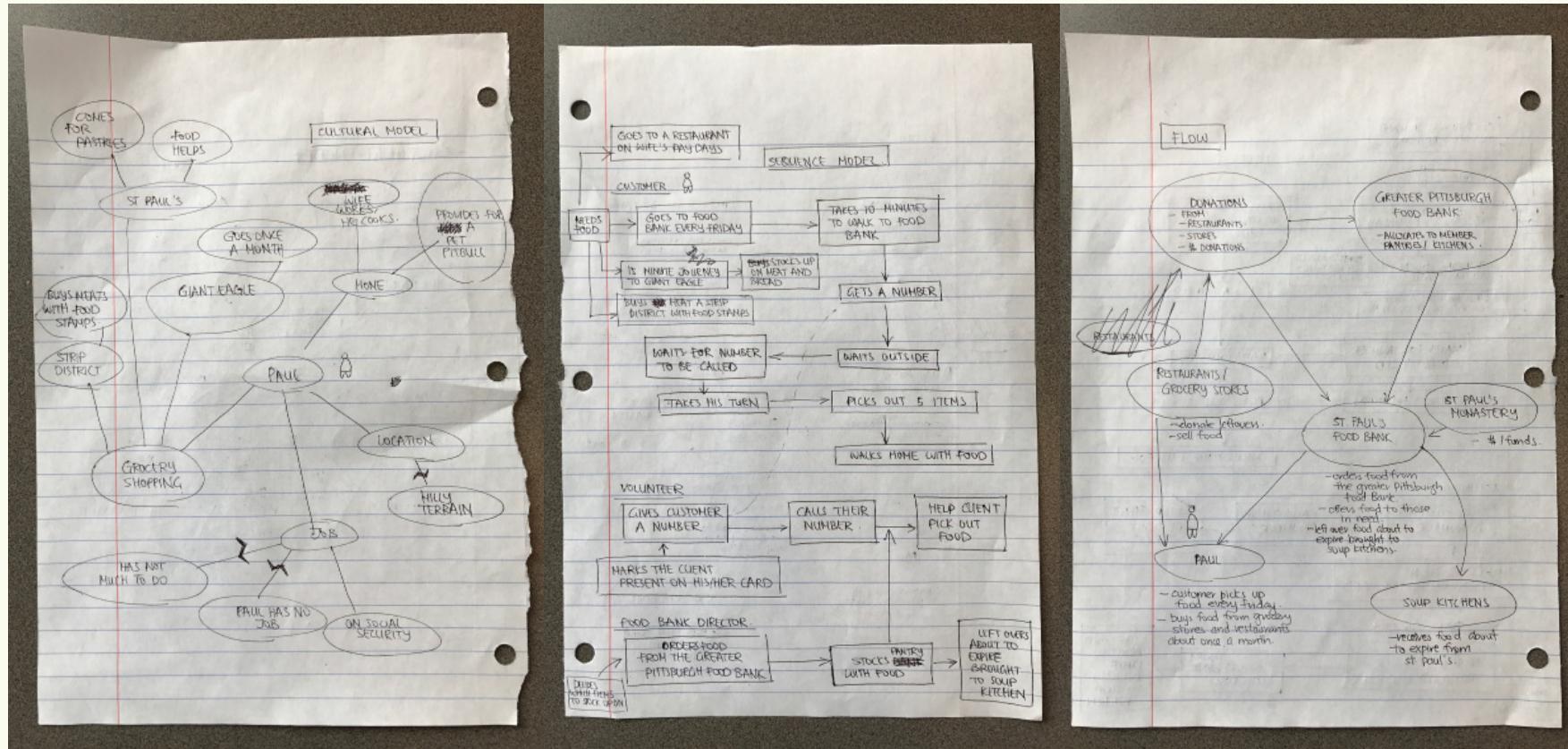
models: alex



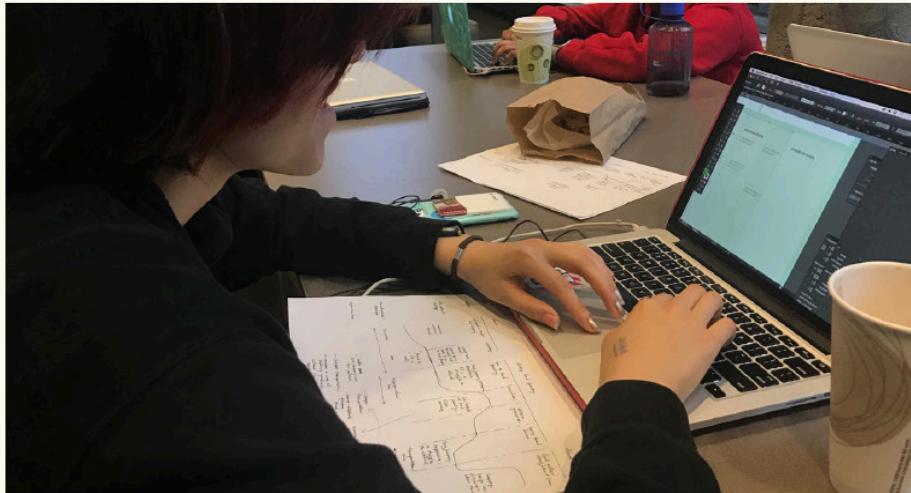
models: gabriella



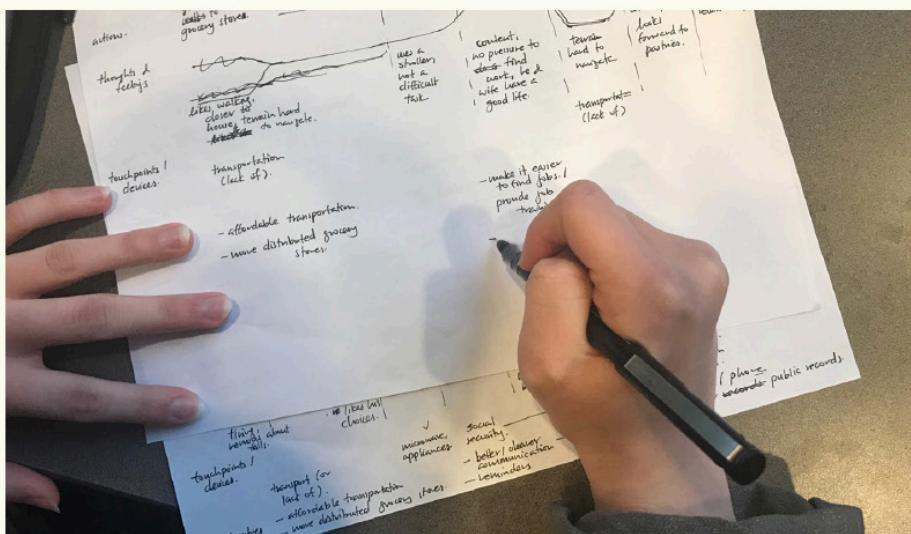
models: patrick



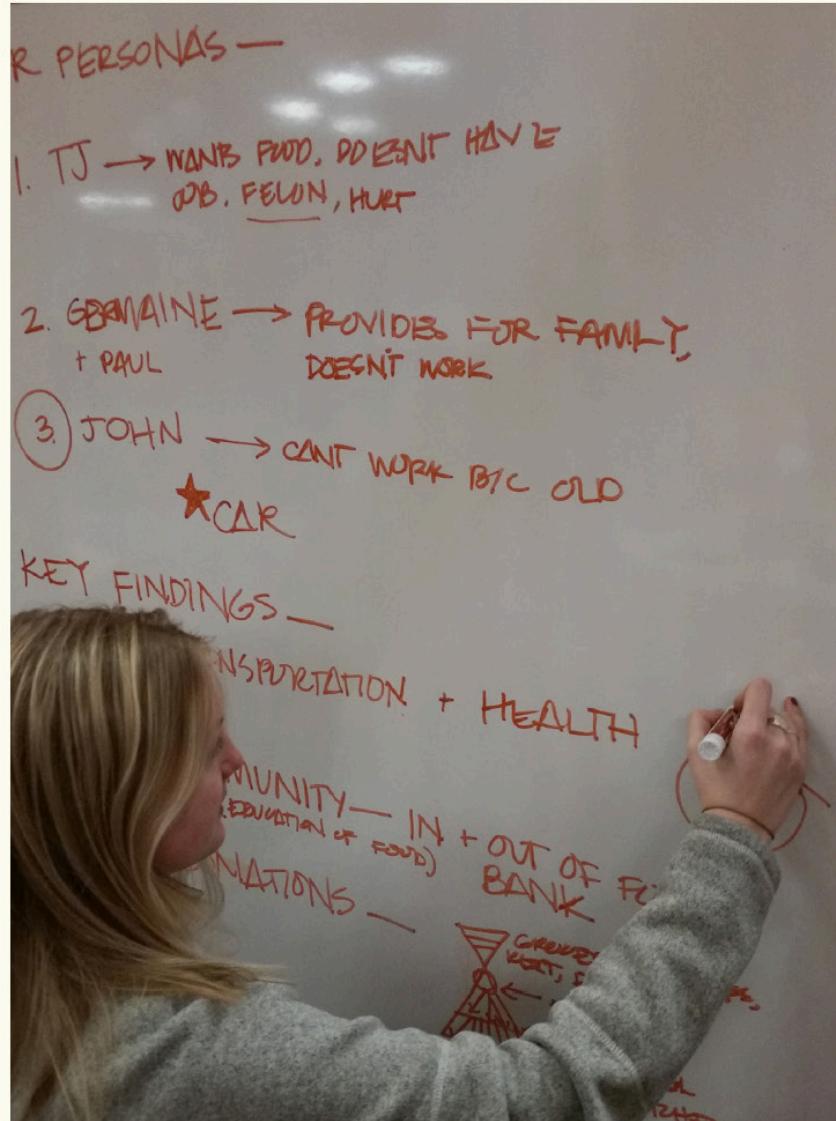
CI model process



translating the journey maps + user personas to digital format



planning out journey maps in tazza d'oro cafe



planning out user personas in wean library

designed survey

planning survey · results

survey design

How did you create the survey questions?

Our questions asks people about their **volunteering** habits, **donation** habits and then about their **demographics**. First, we looked at what other groups had done in their surveys, going through and filling them out.

This was a good exercise for us to do. We were able to make note of which questions felt confusing to answer and how we could avoid doing something similar.

Seeing what other people did for their surveys helped us get a sense for how to direct our own. We wanted to make sure that our questions weren't too specific and also not too broad in asking about volunteering/donation habits.

When we came up with answer options we considered that most of our population would consist of CMU students. In that case, maybe it doesn't make sense to ask students what their annual income is, especially if many people are unemployed.

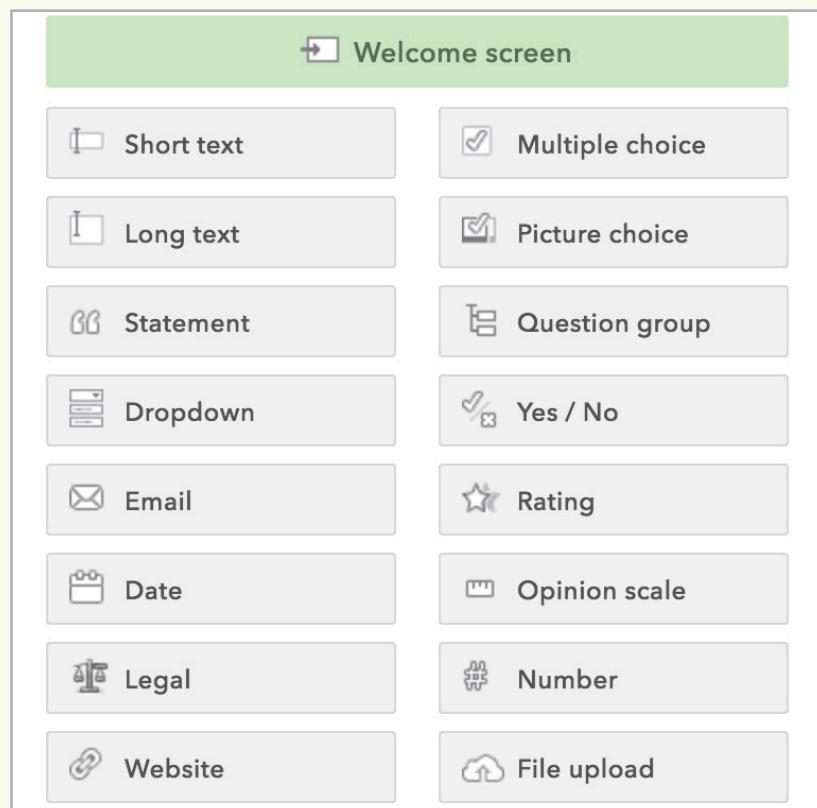
<https://ucrefood.typeform.com/to/hkApnE>

The screenshot shows a portion of a survey form. At the top, there is a red navigation bar with the text "1 → Volunteering for Causes". Below this, question d. "Why do you volunteer?" is displayed in red. A sub-instruction "Choose as many as you like" is followed by a grid of eight answer options, each with a radio button and a label: A. Personal values, B. Do it for fun!, C. Recognition, D. I care about the cause., E. It's expected of me, F. Religious reasons, G. To fulfill a requirement, and H. Other. Below question d., question e. "How frequently do you volunteer?" is shown in red. It has five answer options: A. Once a year, B. Once a week, C. Multiple times a week, D. Once a month, and E. Other. At the bottom of the form, a progress bar indicates "0% completed".

using typeform

What did you use to create the survey?

We chose to use Typeform, an application that is like Google Forms. Typeform is different however in that it gives users more control over the design of the form and provides more options for question types to use in the survey. Users are able to customize the questions and even the color scheme.



The screenshot shows the Typeform survey editor. At the top, there's a dark header bar with the title 'Typeform' and navigation tabs: Build, Design, Configure, Share, Analyze. Below it, a light green header bar with the title 'Drag & drop Welcome screen' and a sub-instruction 'Write a welcome message & add logo, image or video to make it yours'. The main area contains three sections of questions:

- Volunteering for Causes**
 - a * In the past year, have you spent time volunteering?
 - b If you answered no, why didn't you volunteer?
 - c If yes, what cause(s) did you volunteer for?
 - d Why do you volunteer?
 - e How frequently do you volunteer?
 - f Who do you volunteer with?
- Drag & drop sub-questions here**
- Donating Money for Causes**
 - a * In the past year, have you donated money to a cause?

survey audience

Who did you send it to?

In being consistent with the rest of the class, we distributed this survey online to Facebook, posting in various groups and sending the link out to friends. We're aware that our results may be biased since we posted this survey to Facebook.

We're limiting the number of people who will see this survey by posting in groups we're affiliated in ourselves: Class of 2018, Design Class of 2018, CMU BHCI Active Students, etc.

We realize that by sending it to groups or posting in pages that are specifically geared towards people who participate in philanthropy is most likely going to bias our survey results.

 **Tiffany Jiang** shared a link.
Yesterday at 9:39am · 

have you volunteered or donated money to a cause in the past year? my HCI group would like to hear why you did or didn't! your responses will help improve our research 😊



Volunteering + Donating
Built with Typeform, the FREE online form builder that lets you create beautiful, mobile-friendly online forms, surveys & much more. Try it out now!
UCREFOOD.TYPEFORM.COM

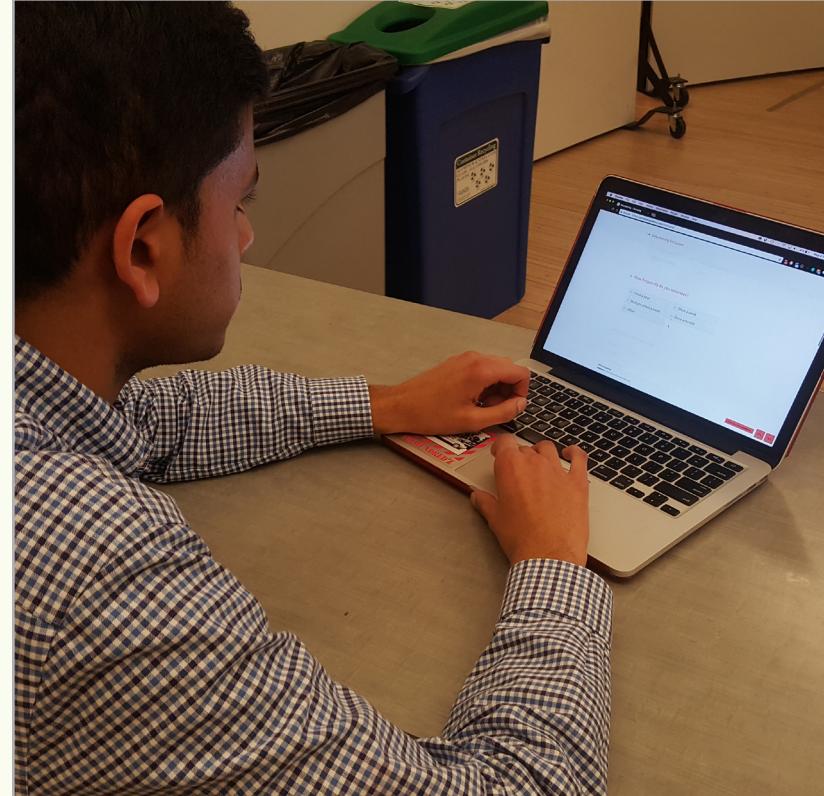
user testing

Who did you test the survey with?

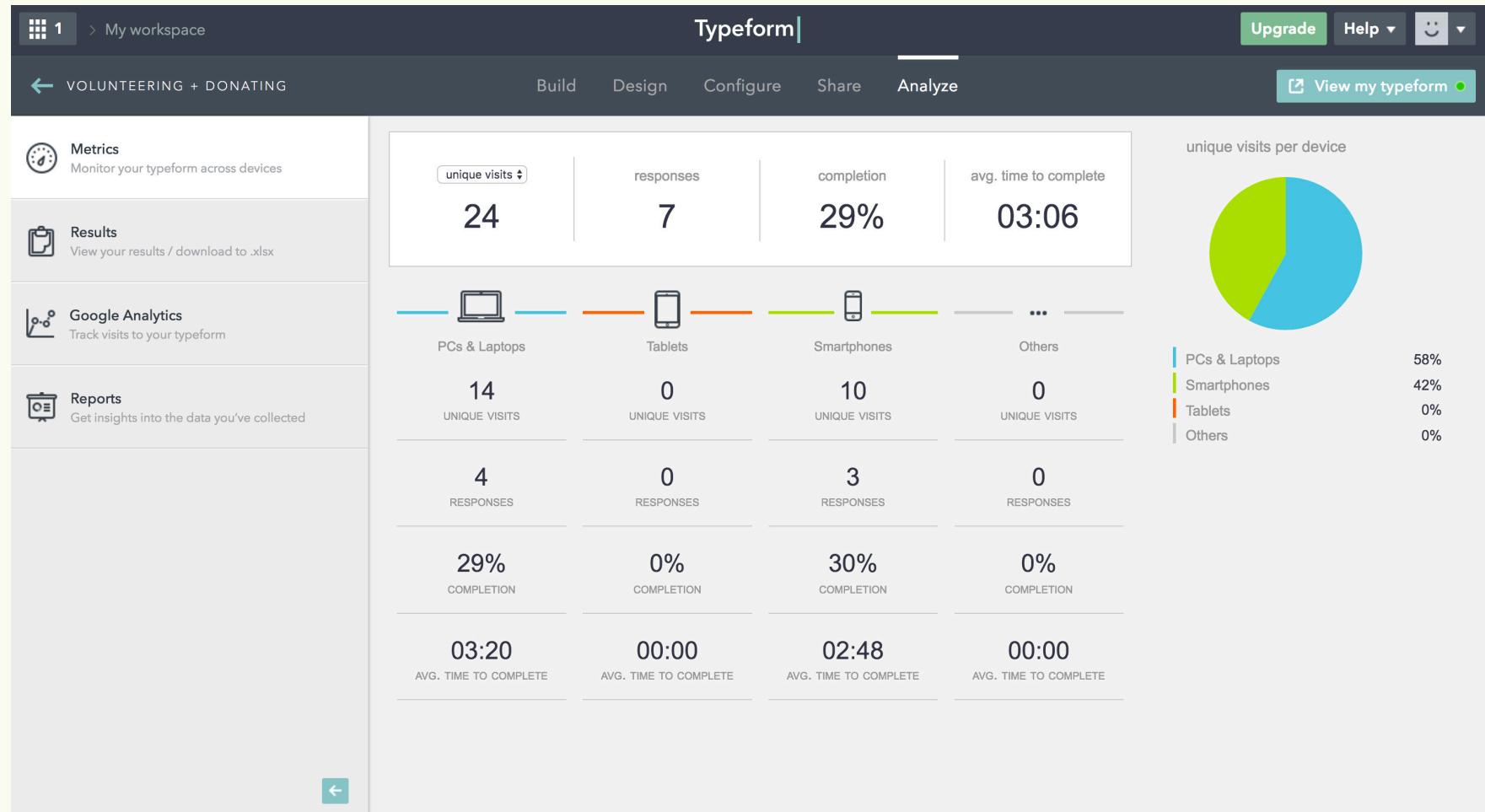
We tested with friends to see if they had trouble with any of the surveys. We asked them to say their thoughts out loud while answering questions so we could tell which parts made them hesitate or feel confused.

Most people got through the survey without any problems. Some people would pause a bit if they were asked to recall events in the past (ex: which causes they volunteered with or donated to).

Also, we were told that it was hard to pin down the frequency with which they donated or volunteered time based on the multiple choice answers provided. Many opted to write in their own phrase or word (ex: infrequently).



data collection



Checking on survey results after sharing to groups on Facebook

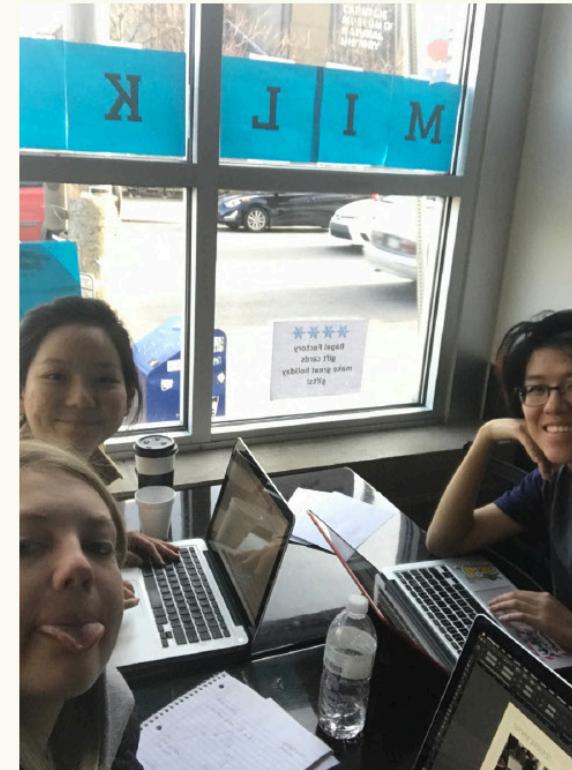
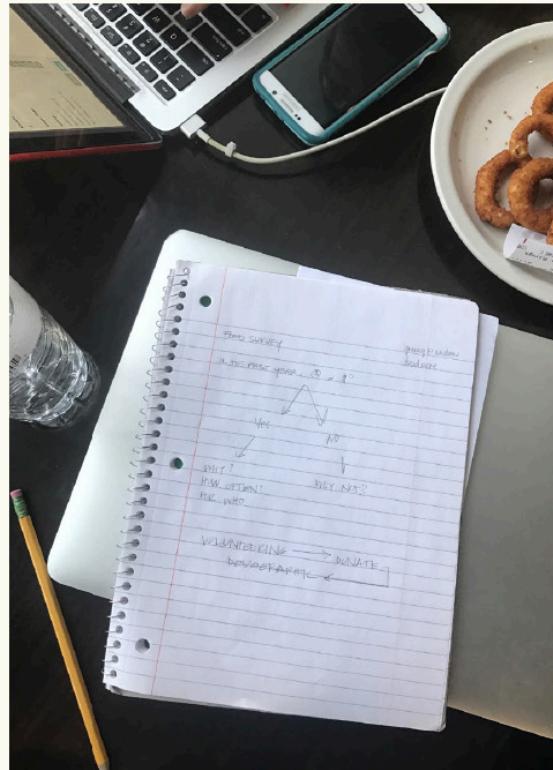
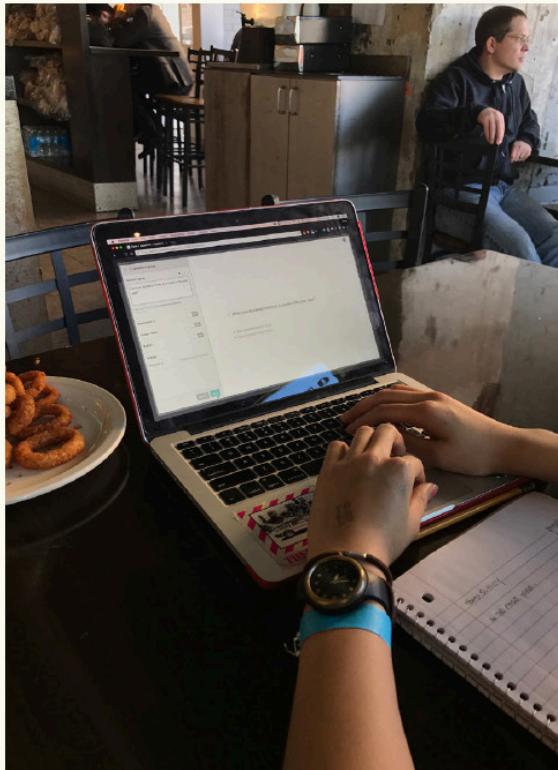
getting responses

The screenshot shows the Typeform interface in 'Analyze' mode. The top navigation bar includes 'Upgrade', 'Help', and a user icon. The main header 'Typeform' is centered above the analysis area. The left sidebar lists four sections: 'Metrics', 'Results', 'Google Analytics', and 'Reports'. The 'Results' section is active, displaying a table of survey responses for the period Feb 20, 2017 - Feb 22, 2017. The table has columns for questions 39.k, 40.l, 41.m, 42.n, 43.o, and 44.p. The first row shows responses for 'ACLU, Wikipedia, Red Cross'. The second row shows responses for 'neighborhood restoration in pittsburgh'. The third row shows responses for 'People I think needed money. Missionary work. Flag days.' The fourth row shows responses for 'Disaster relief'. The bottom of the results table indicates 1 - 7 to 7 total results.

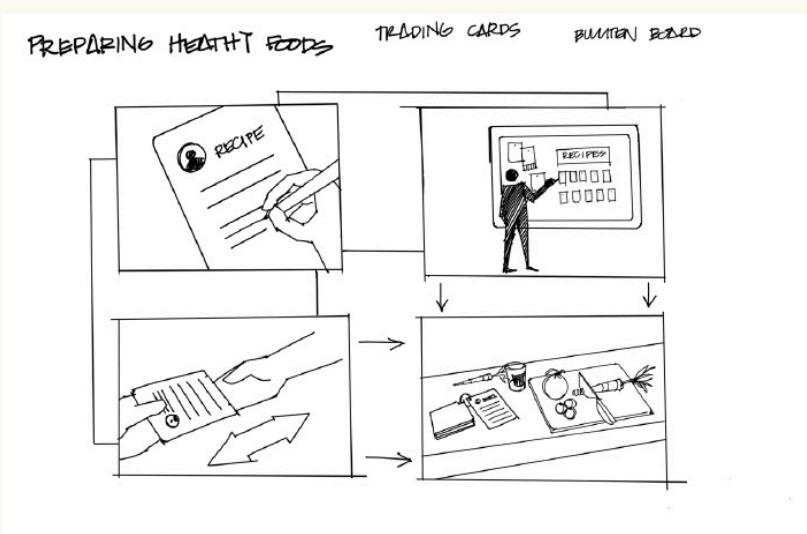
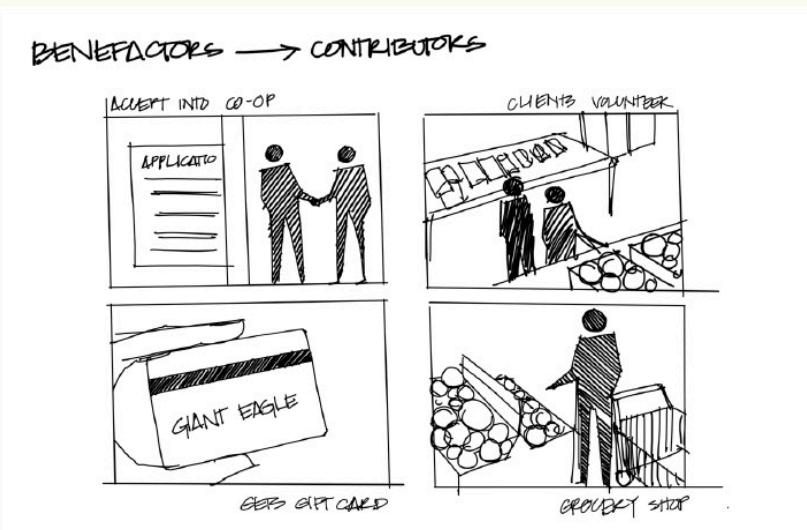
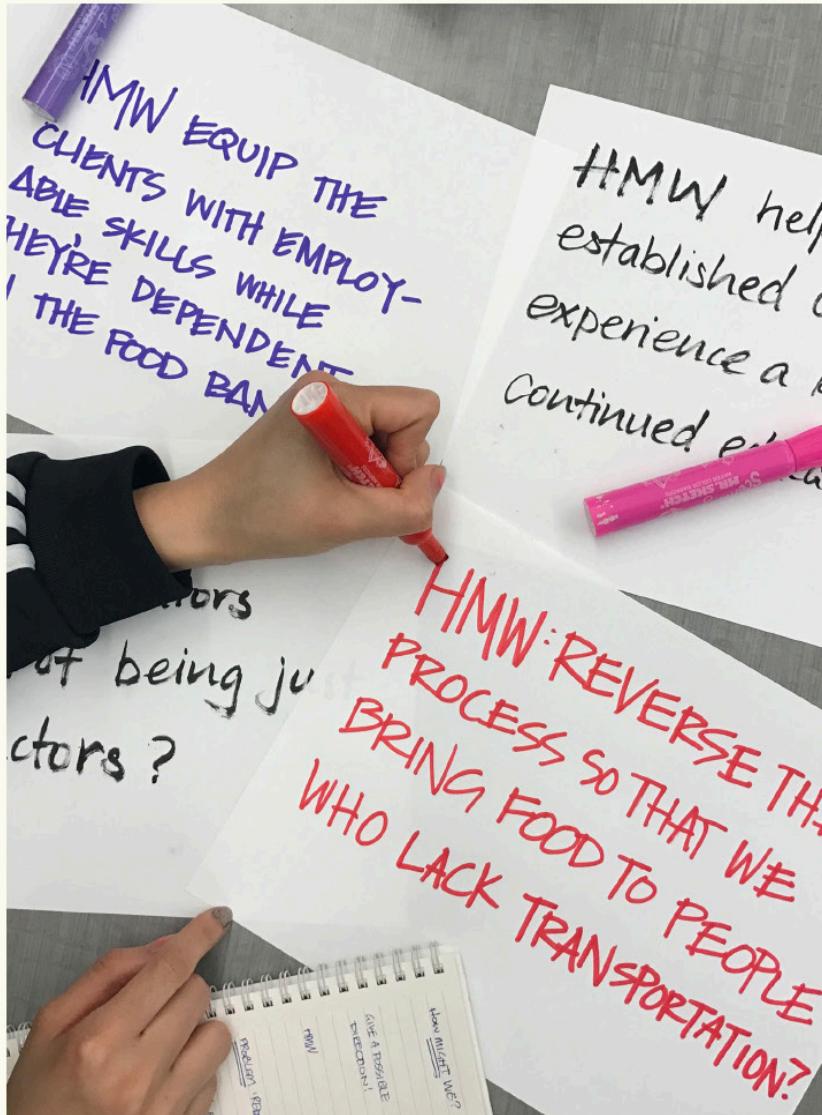
39.k- If yes, what caus...	40.l- Care about the c...	41.m- Can afford to d...	42.n- Can't volunteer ...	43.o- Influenced by o...	44.p- Get recognition...
ACLU, Wikipedia, Red Cross	Care about the cause	Can afford to donate	Can't volunteer but can given money		
neighborhood restoration in pittsburgh	Care about the cause	Can afford to donate	Can't volunteer but can given money		
People I think needed money. Missionary work. Flag days.	Care about the cause	Can afford to donate	Can't volunteer but can given money	Influenced by others to do so	
Disaster relief	Care about the cause	Can afford to donate	Can't volunteer but can given money		

Seeing how survey results differed between individuals

survey process



Storyboard process



style guide

title

taz bold 45pt

subtitle

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heading

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subheading

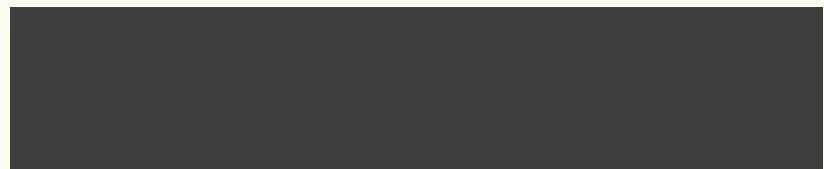
taz regular 12pt

body

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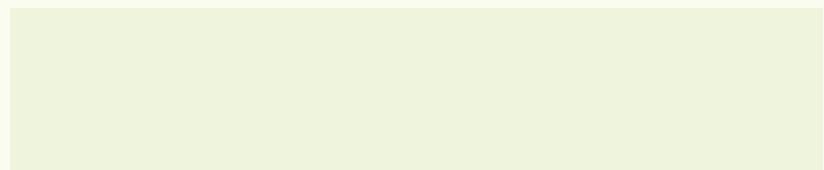
#262425



#505052



#79ae4f



#fbfbbe

contact info

**For questions or further inquiries,
please feel free to reach out to any
member of team MMM.**

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