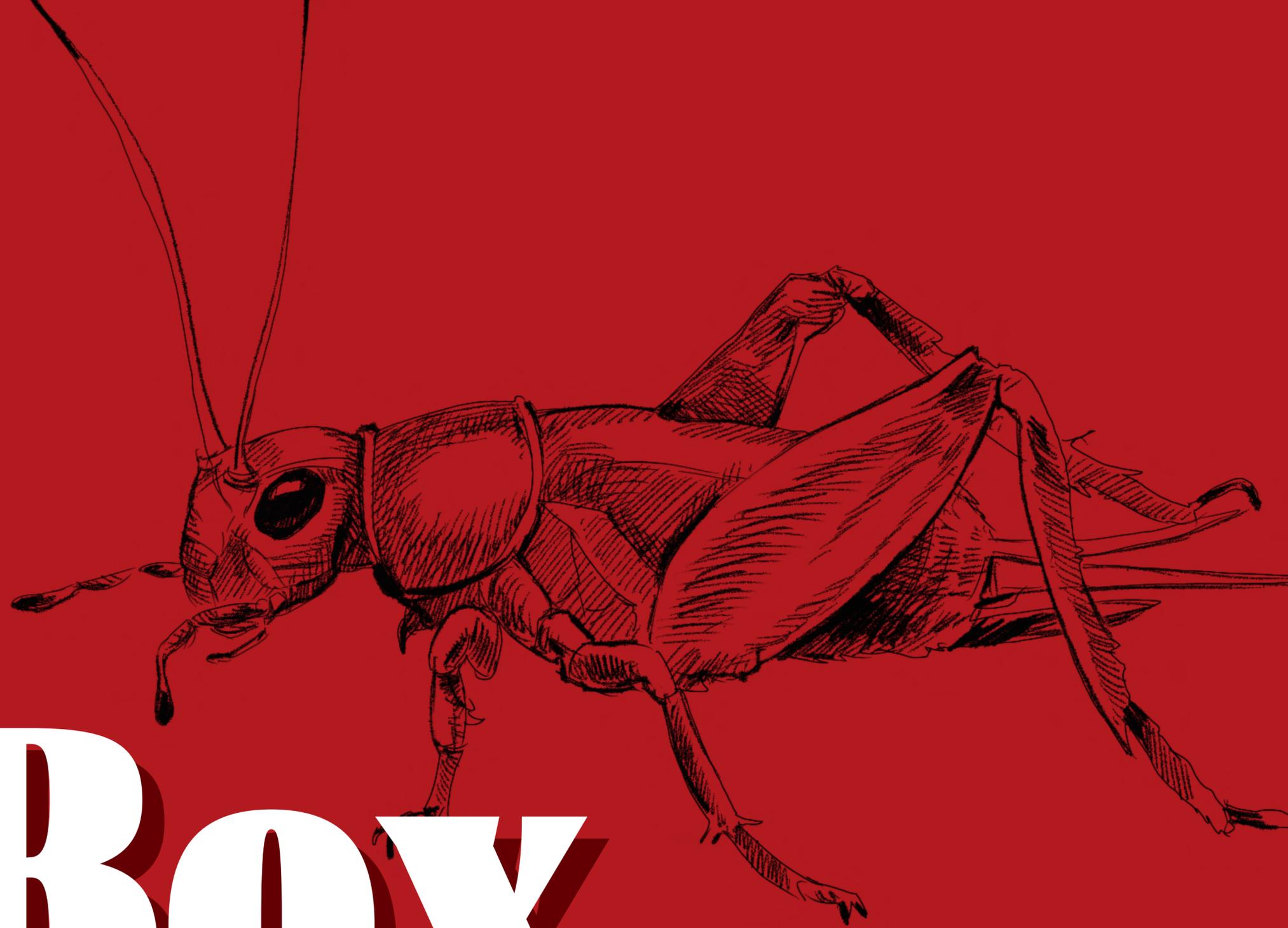


# HCDE 598 Service Design

Sean, Honson, Quilla, & Brayan  
Autum 2021



# BugBox

BUGBOX TEAM

# Meet the Team



**Quilla Valdez Graves**

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**Honson Ling**

*UX Researcher*  
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**Sean Horita**

*Industrial Designer*  
skh99@uw.edu



**Brayan Zavala**

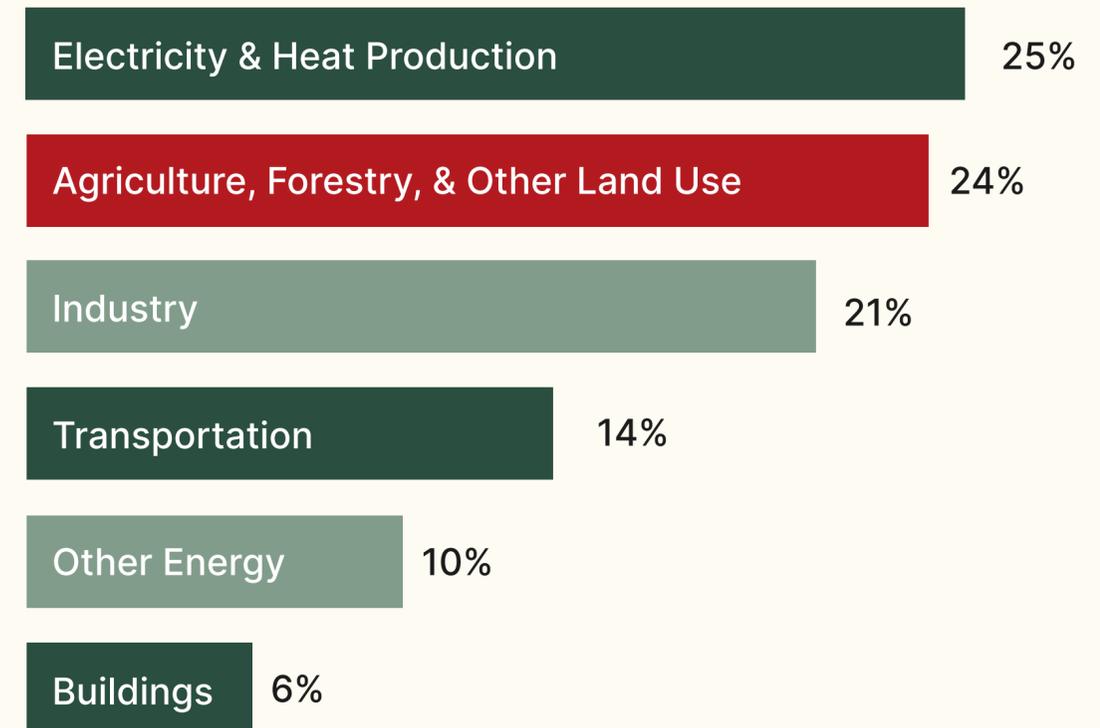
*UX Designer*  
zavalab@uw.edu

## OUR PROBLEM

# A Pressing Need for Novel Proteins

While animal derived proteins provide great benefits to the human diet, the cultivation of crops, livestock, and deforestation resulted in **24% of global GHG emissions** in 2010. Today, it's demand has only grown. Agriculture must reduce its effects on global warming as the demand for animal protein has only increased.

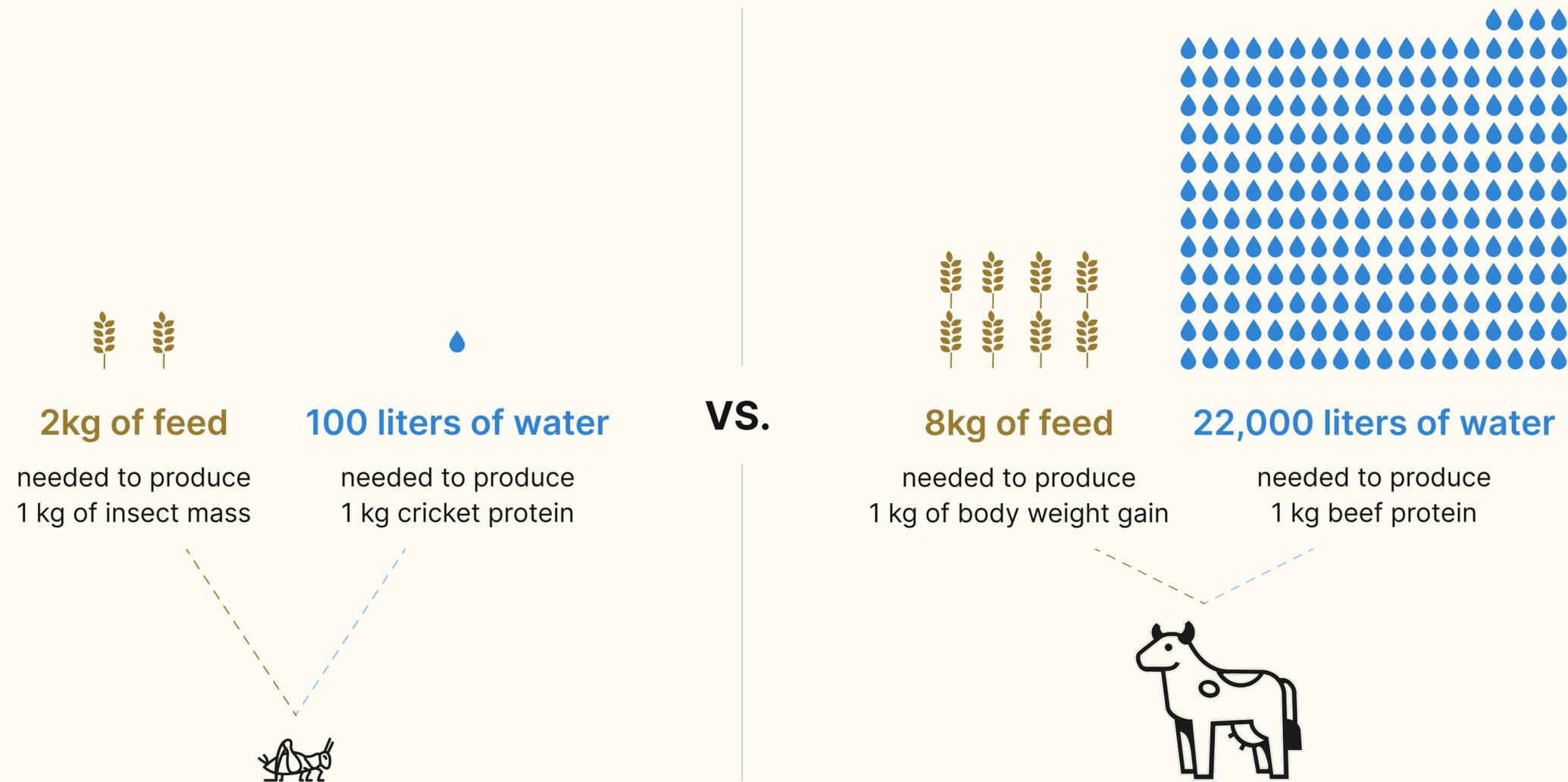
Our service design project explores possible solutions in **entomophagy** - the eating of insects.



## Global Green House Emissions by Economic Sector

2010 numbers for Agriculture, Forestry, Land Use  
<https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data>

## OUR OPPORTUNITY



**Insect based proteins are *far more* sustainable than animal based proteins.**

Climate change  
really bugs us.

**BugBox**

## OUR VALUE STATEMENT

We value *resilience*, *sustainability*, *community*, & *trust* in the design of services that promote novel forms of human nourishment.

# RESILIENCE

Today's food supply chains are vulnerable and volatile.

Together, we have an opportunity to cultivate new reliable food sources that can adapt and scale to nourish the future needs of our community.

**Robustness** - COVID-19 disruptions exposed major vulnerabilities in the US food supply chain, specifically over-centralization and consolidation (4 companies processing 85% of all US cattle). These emerging concerns have led to new government investments focused on improving regional food supply chains.

**Standards** - How can we anticipate and adapt to future agriculture policies? Will livestock protein become an expensive luxury? Will bug proteins become everyday staples? What environmental targets will need to be met to ensure viability?

**Scale** - Current global supply chains are massive, complex, and interdependent. Positioning food production closer to local communities drastically lowers operational costs and environmental toll, while bolstering food security.

# SUSTAINABILITY

Raising livestock is resource intensive and damaging to the environment.

- consumes arable land & water
- destroys carbon 'sinks'
- produces toxic GHG emissions

Our mission is to produce *more nourishment*, with *less resources*.

**Conscience** - Food consumers are already primed to value differentiators like "organic" and "free-range". How can we distill complex information into meaningful insights that help our community learn and take action? "per 100 gallons of water consumption, you can get 71 grams of protein from crickets, or only 6 grams from a cow"

**Minimizing Waste** - Food waste in the US is estimated at between 30% - 40% of the food supply (USDA). Most consumers are not ready to completely sacrifice convenience for sustainability, so reductions in food waste and packaging are key to reducing environmental footprint.

**Clear Accounting** - For sustainability to grow in influence as a key performance indicator, we need clear tracking of GHG emissions. Consumers already compare CO2 impact for airline trips and may soon demand similar disclosures for food production.

# COMMUNITY

For our service to be successful, we want to start small, local, and aspirational. A community of like-minded edible insect enthusiasts will generate interest and momentum, and embrace and encourage new members.

New values may emerge from emergent communities, supporting both producers and eaters.

**Dependable** - Even when disrupted by the unprecedented events of 2020, ad hoc communities formed to innovate and meet member needs. Communities effectively promote access to materials and information out of their own self-interest.

**Committed** - Eating bugs might seem unpleasant or unfathomable. Having advocates to serve as role models within a community can bring people together around worthwhile causes, and expand membership.

**Producers** - Today's supply chains are intricate and convoluted. Instead, local edible insect production can be transparent and efficient. We see value in forging meaningful connections between insect farmers and end consumers.

## VALUES

# TRUST

We want to move people from apprehension or revulsion, to *interest*, *enthusiasm*, and *advocacy*.

Part of this conversion could be derived from facts and statistics, but real commitment must come from meeting people and their unique tastes at their individual points of comfort.

**Worth Eating** - The USA, EU, and a coalition of countries in Asia each have established trade groups that promote entomophagy, research aspects of insect farming, and formulate policies and best practices to aid in developing this new industry. The insect protein market is projected to be worth around \$1.3B in 2025, having grown at roughly 30% YOY since 2015.

**Good For You** - Insects convert nutrients and water into protein far more efficiently than commonly consumed animals. Most species have more protein by weight than legumes; some contain more than meat and eggs. In addition to high protein content, crickets contain iron, calcium, and B12.

**Established Traditions** - 2B people around the world already eat bugs. People in the US may have seen or tried bugs when traveling abroad and learning about other cultures' cuisines. Cookbooks and increased awareness through many channels helps to normalize gourmet entomophagy, but we recognize many people will want to take baby steps on the road to commitment, and we want to support their nourishment needs.

# Research and Discovery



**BugBox**

SERVICE GOAL

# Becoming a BugEater

At BugBox, our goal is to create a **meal delivery service** that evangelizes edible insects as a staple ingredient in the daily meals of our community.

In the adoption phase, it will take some ingenious marketing and adventurous foodies to try our products.

Our goal is to **normalize edible insects** through a community of *BugEaters*!



# User Research Methods

## Survey

Questionnaire on attitudes and behaviors associated with edible insects (n=25).

## Co-Design

Co-design with participants a communal dinner with edible insects through a series of activities (n=5).

## Narrative Prototype

Role play a scenario where customers are introduced to BugBox through food sampling at a local grocery market.

## METHODS

# Edible Bug Survey

In our discovery phase, we leveraged the speed and efficiency of the **survey method** to gather insights from **25 participants** on consumer attitudes and experience with edible insects.

## WHAT WE LEARNED

**Word-of-Mouth matters** - Word-of-mouth strategy, such as recommendation through friends and family, as well as through online platform, such as Instagram, Yelp, or Google are crucial in changing food consumption behavior.

**Lack of familiarity creates fear** - While people who have tried insects generally enjoyed their experience, people who haven't tried insects expressed great fear due to their assumptions about its poor texture and taste.

**Health & Safety was a big concern** - Participants would like more confidence or transparency into the process of preparing the bugs.

## METHODS

# Co-Design

We led an online **co-design workshop** with **5 participants** consisting of various activities, such as food image web search, value discussion, and a create-our-own communal-insect-meal activity.



## WHAT WE LEARNED

**Education & reflection changes attitudes**- Most participants had a strong aversion to the idea of eating bugs at first. Once they saw and reflected on the different ways to consume them throughout the session, they seemed way more willing to try them by the end.

**Hide the bugs!** - Most participants would not like to see or visually know that they are eating bugs. Nor would they like to be reminded of that in the packaging. Using a powdered or 'flour' format could present opportunities to alter or innovate on bug food form.

**Climate catastrophe effects is powerful**- Even though some participants mentioned that there are other ways to be green or to eat protein, when given the scenario that meat would be more expensive to produce, they understood and agreed that this new form of protein could be more a more viable option for them.

**Nutritional value & health benefits also sells** - When presented with some of the nutritional facts and health benefits, participants expressed that they were more compelled to try them and consider it as a regular source of protein.

# METHODS

# Co-Design Activities

## Brainstorm Foods

	Example: Your favorite place	Your favorite Snack	Your favorite Drink	Your favorite Veggie	Your favorite Carb	Your favorite Protein
P1						
P2						
P3						

## Discuss Values

What is your first impression when you hear about eating edible insects? (3 min)

P1	I've done this before and it feels like the future	The cricket chips I had were pretty good	I accidentally ate a bug yesterday on a bun and it was pretty gross when the bug was like a full bug	The cricket chips were savory and salty	I've heard bugs are a more sustainable resource to make food from.	I think in order for this to be successful the bugs have to not look like or even the texture of bugs.
P2	never done it before	it would heavily depend on the seasoning and the way to cook it	as long as I don't have an image of a full insect in my mind I will be totally open to it	I am intrigued by the concept and would like to try	I want to know how it's being handled	
P3	Why would anyone ever want to eat insects	Look terrifying (either the food itself, packaging)	the imagination of the shape and the texture of the bugs in mouth are terrifying			

What values matter for you in eating edible insects? (3 min)

P1	Sustainable food production	Health	
P2	if it helps with sustainability	if it helps with food access in general	nutritional values
P3	nutritious		

## Communal Meal Ideation

Pasta made out of insect flour			Garlic bread with bug seasoning		
Dessert			insect flour in cookies	red beetle dye in a dessert	Sweet Realm
Something soaking in a sauce to hide the bugs in			Protein Pancake	Protein Powder - Cricket Powder	Protein Oat

## METHODS

# Narrative Prototyping

Through role-playing how a salesperson sells **BugBox at a local Costco**, we explore how different consumers might react to our products.

Through this activity, we assigned ourselves the role of a **salesperson**, a **skeptical consumer**, and an interested soon-to-be **BugEater!**

## WHAT WE LEARNED

**People love the interpersonal relationship a salesperson can make** - By having a spokesperson to explain and demonstrate the value of our product, others find this way of selling really persuasive.

*"The salesperson has to not only 'sell' the product, but the concept of eating bugs too"*

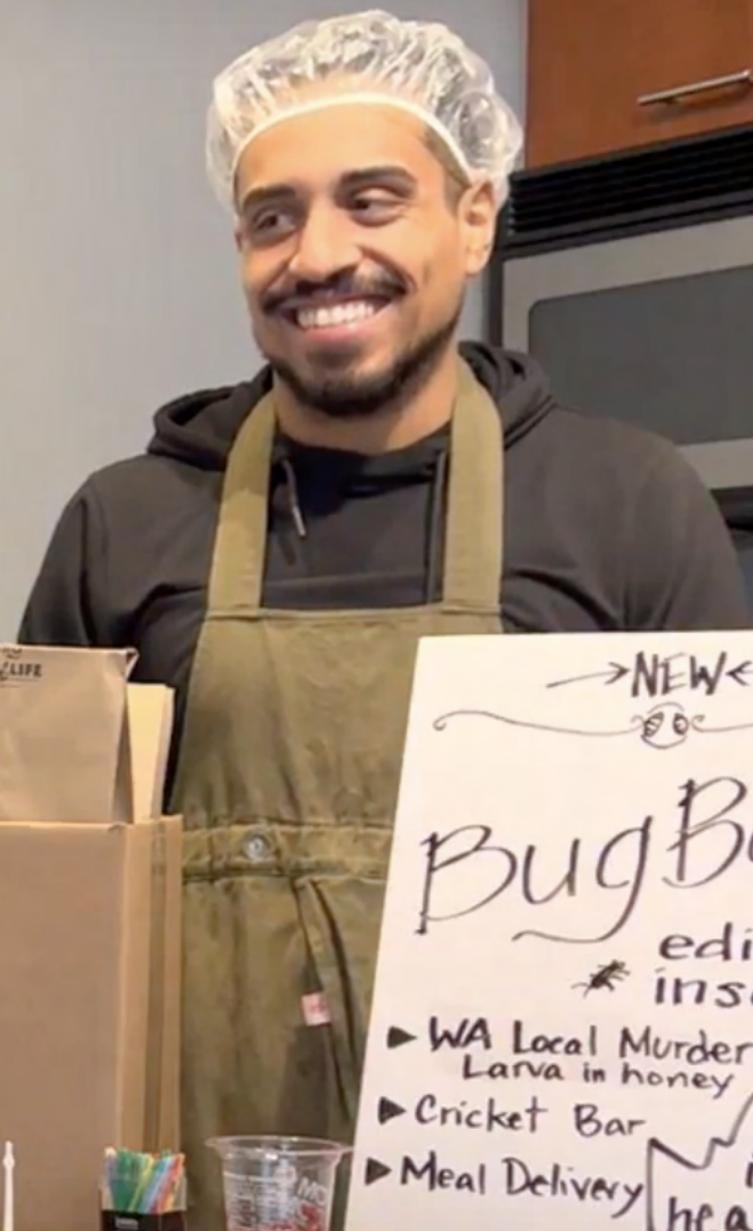
*- Fellow design student*

**Rethink how customer discovers our product** - Initially through our narrative prototype, we envisioned our customer finding our product through the sampling counter of Costco. By acting out our scenario and gathering feedback from other designers, we realized that this might not be the only entry point for potential customers to subscribe to our product.

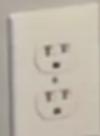
Through narrative prototyping, we found that the branding of a grocery chain also matters. Furthermore, we might also explore other avenues such as local farmer markets and social media platforms.

*"I could see this interaction happening more at a Whole Foods or PCC instead of a Costco though, maybe because Costco always seems very frenzied and cold to me because of the warehouse-y vibes."*

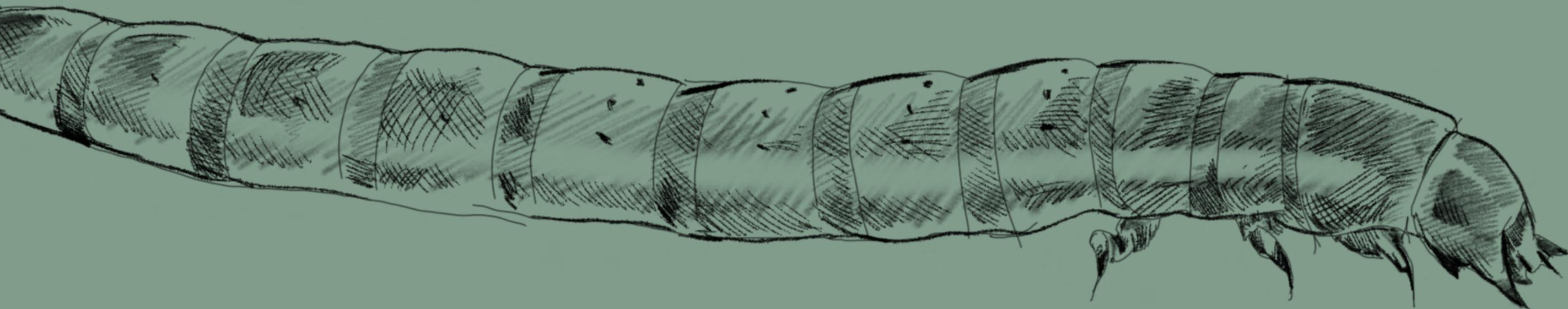
*- Fellow design student*



→NEW←  
Bug Box  
edible  
insects  
▶ WA Local Murder Hornet  
Larva in honey  
▶ Cricket Bar  
▶ Meal Delivery  
it's healthy!  
(we promise)



# Our Service Strategy



**BugBox**

# Our Design Principles



## Naturally Abundant

We are biophilic. We abide by the bounty of ecosystems. Our design choices proceed from nature, not from technology or ego. Visually wholesome and earnest.

**Abundance** and **richness**, not scarcity, not doom or guilt.



## Change & Growth

We will meet you where you are in this new food adventure. You are part of this movement with deep affinities for helping the planet, and we'll be together in this exploration.

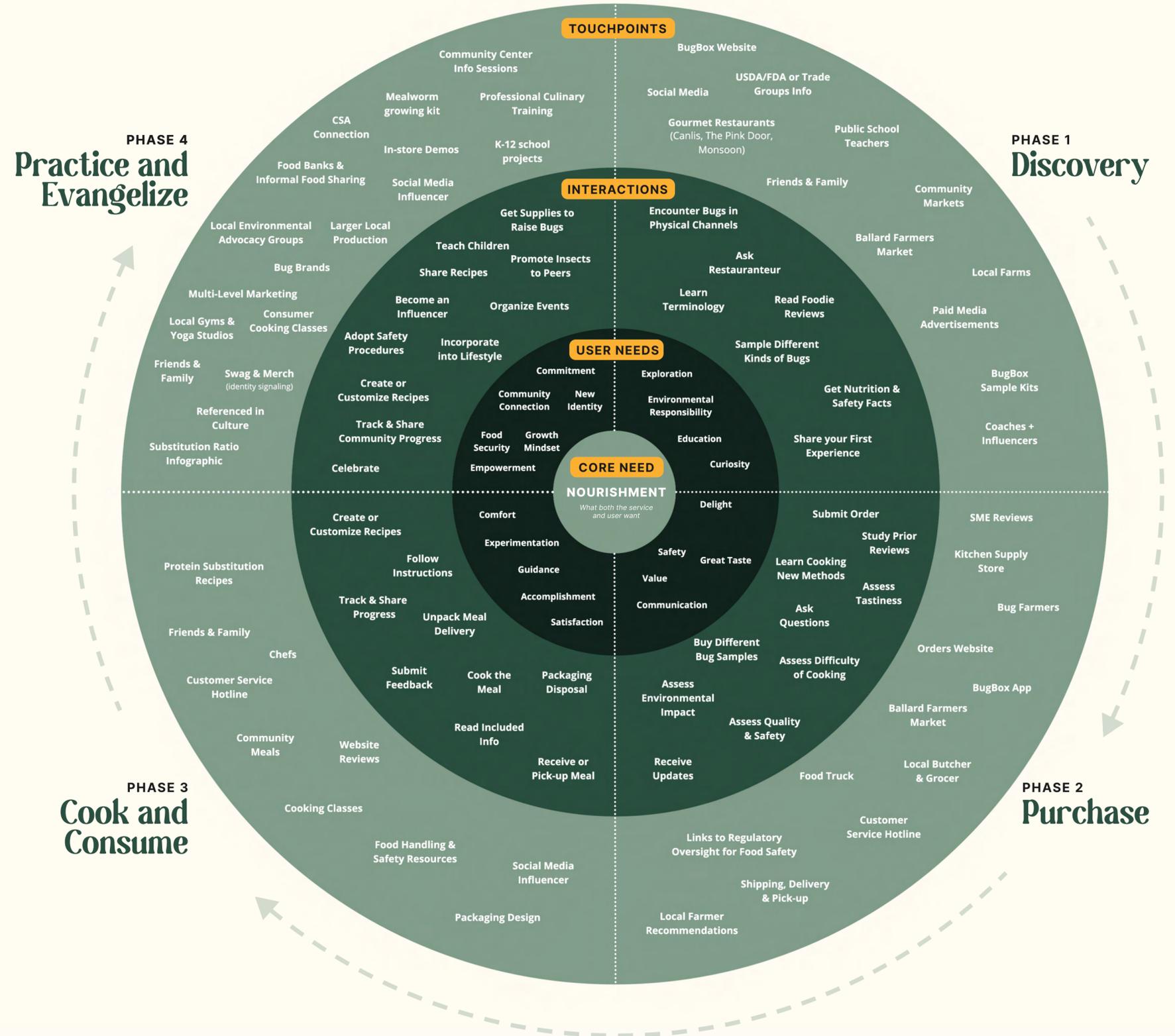
***"You can do this!"***

SERVICE ECOSYSTEM MAP

# How to Become a BugEater

This service ecosystem map is centered on the deep-seated need for human nourishment as a primary value.

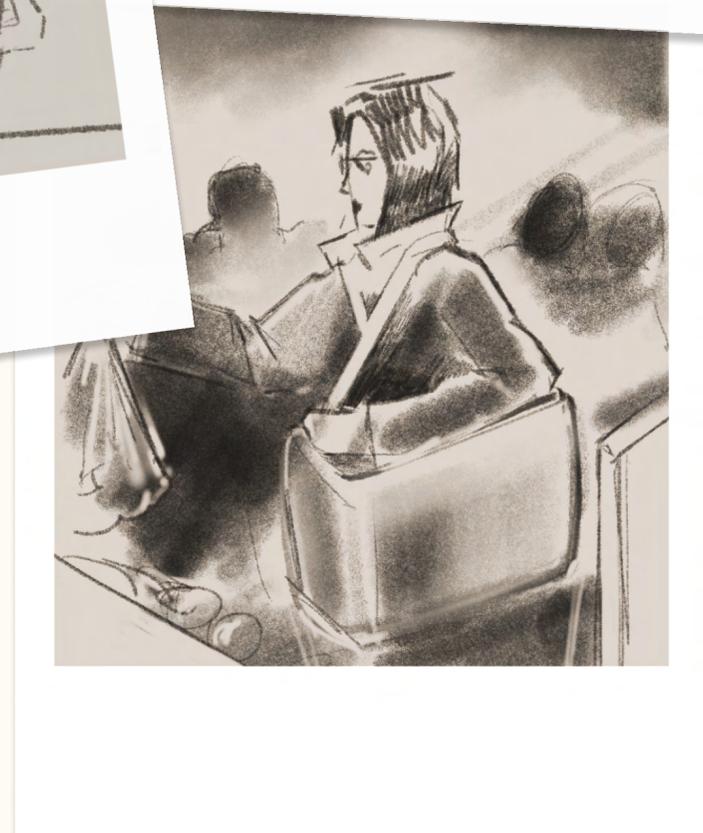
In the context of consuming insects-as-food, the service is comprised of **four phases** which lead an eater through a process of becoming committed to entomophagy.



# Meet Stephanie

Stephanie is a **34 year old Developer** living in **Ballard, Seattle, WA**. She is an avid cyclist and has been looking for new ways to **increase her protein** consumption for her winter training.

During one of her weekly trips to the **Ballard Farmer's Market**, she sees a compelling BugBox tent with a sign, saying that they sell bug-based proteins.

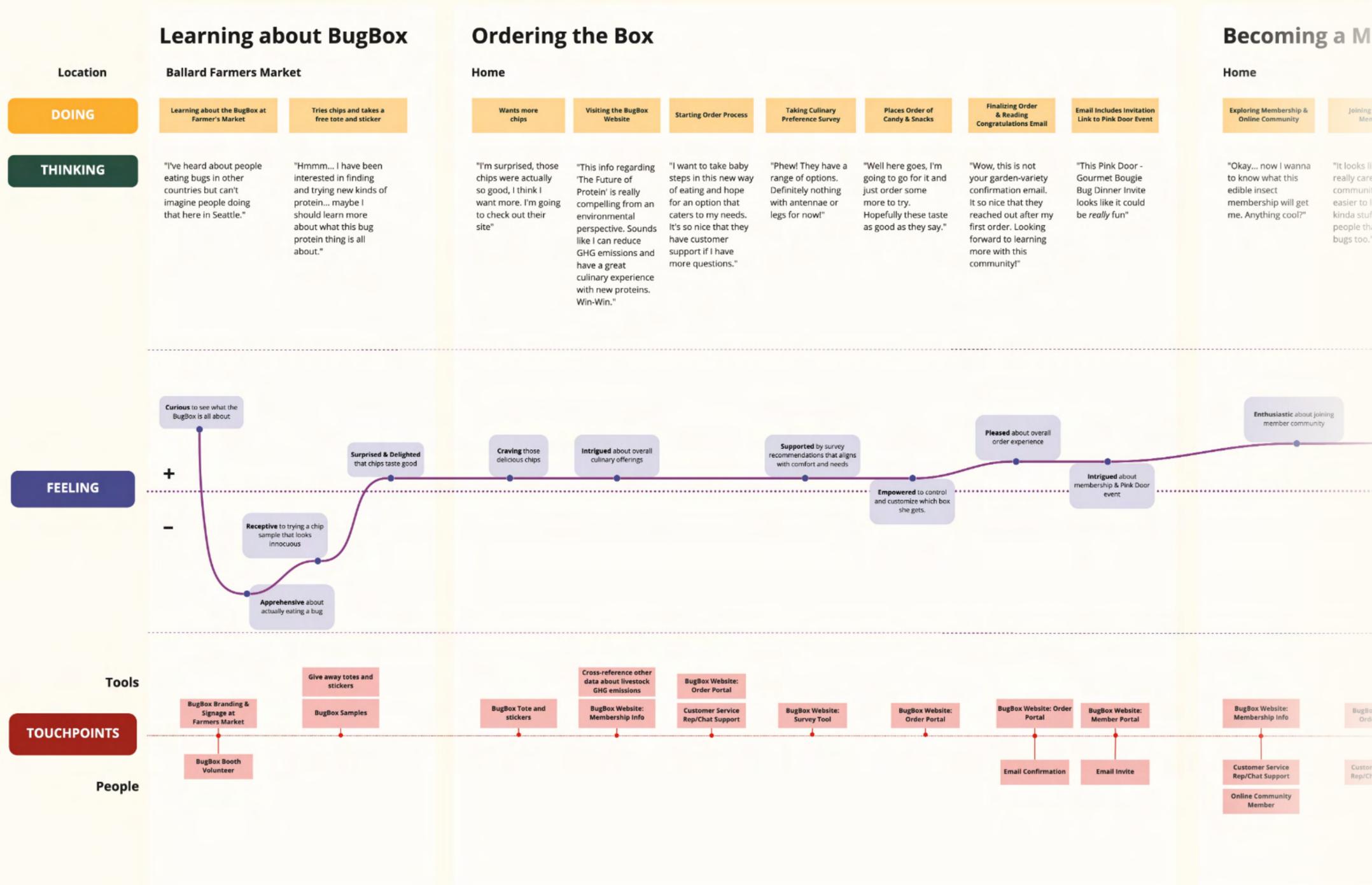


# USER JOURNEY MAP

# Journey Map

## Steps in Stephanie's Journey

- Learning about BugBox
- Ordering the Box
- Becoming a Member
- Getting Snacks
- Eating Whole Gourmet Bugs
- Reordering the Box



# USER JOURNEY MAP - CONTINUED

## Getting the Box of Snacks

Home

- Opening the box
- Reading the "Glossy" Marketing & Event Reminder
- Unpacking Swag & Contents
- Eating the Candy & Snacks

"Ahhhh! IT'S HERE! Time to munch on some bugs...kinda!"

"Aww this box is so nice and I love the packaging and the message it contains. 'Nourishment for and from the Earth'. Oh yeah, and there is that event invite"

"This stuff is too cool. I gotta show this to my brother! I think he'll like the packaging and this interesting book too!"

"These are pretty good! Also, I know this shouldn't surprise me but its oddly nice to know exactly which insects are in each snack. I'm glad the ingredient list is so clear. Doesn't seem that scary."

## Eating "Whole" Gourmet Bugs

The Pink Door, Seattle WA

- Going to Pink Door Culinary Event
- Eating Bougie Bugs
- Meeting other Bug Eaters
- Becoming a Bug Eater

"This is it... the moment of truth... Definitely a core memory, for sure."

"Okay...seeing actual bugs on a plate is pretty surreal...but WOW this is actually quite tasty! I'm gonna have to share with my friends."

"Everyone is so welcoming and encouraging, it's amazing how engaged the group is and how excited they are about new members"

"It seems like everyone is doing really interesting things in this community, and they care deeply about climate change. I think I really want to be part of this"

## Reordering a Box

Home

- Visiting the BugBox Website to Order Next Box
- Selecting Protein Supplement & Ready-to-Eat Meals
- Finalizing next order
- Reviewing Data on Environmental Impact
- Telling people about experience

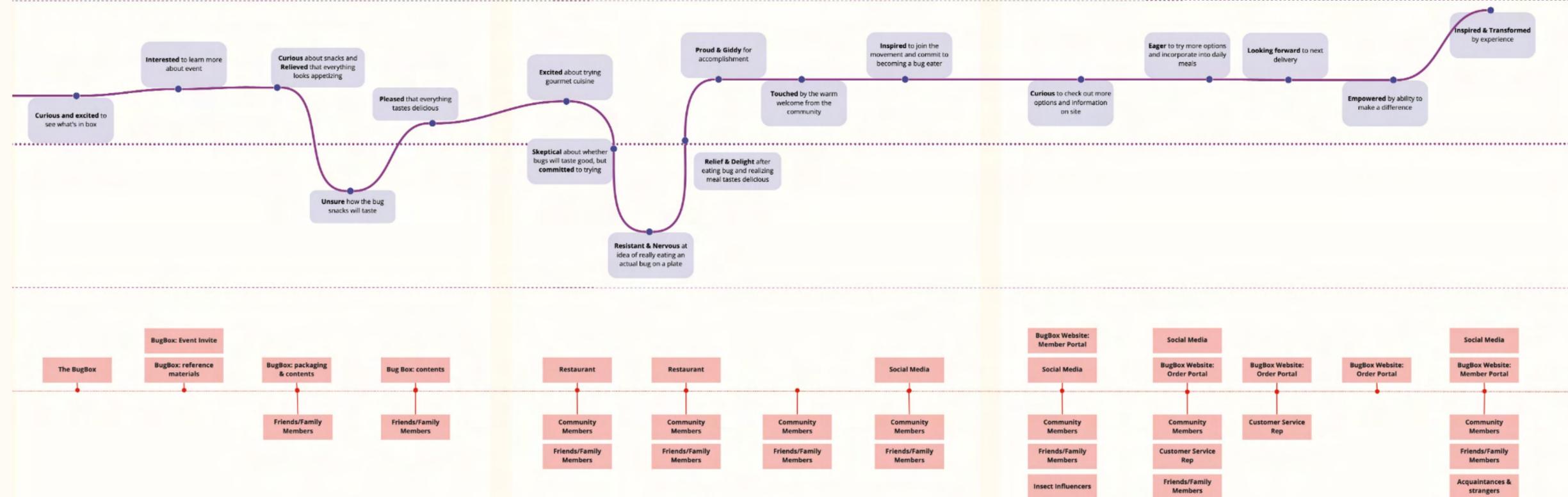
"You know what? I really like this community. Now that I know that I can do this, and it tastes great, and I can learn from all of these great people, I'm gonna definitely keep ordering more boxes."

"Hah! I guess now I'm someone who eats bugs for realz. Am I one of those people that are actually ready for the Apocalypse now?"

"What's next @BugBox?! I'm actually pretty excited to try this next box and start cooking some meals myself"

"This is amazing! I can't believe my food choices can make this much of an impact on the environment. I feel like this really matters."

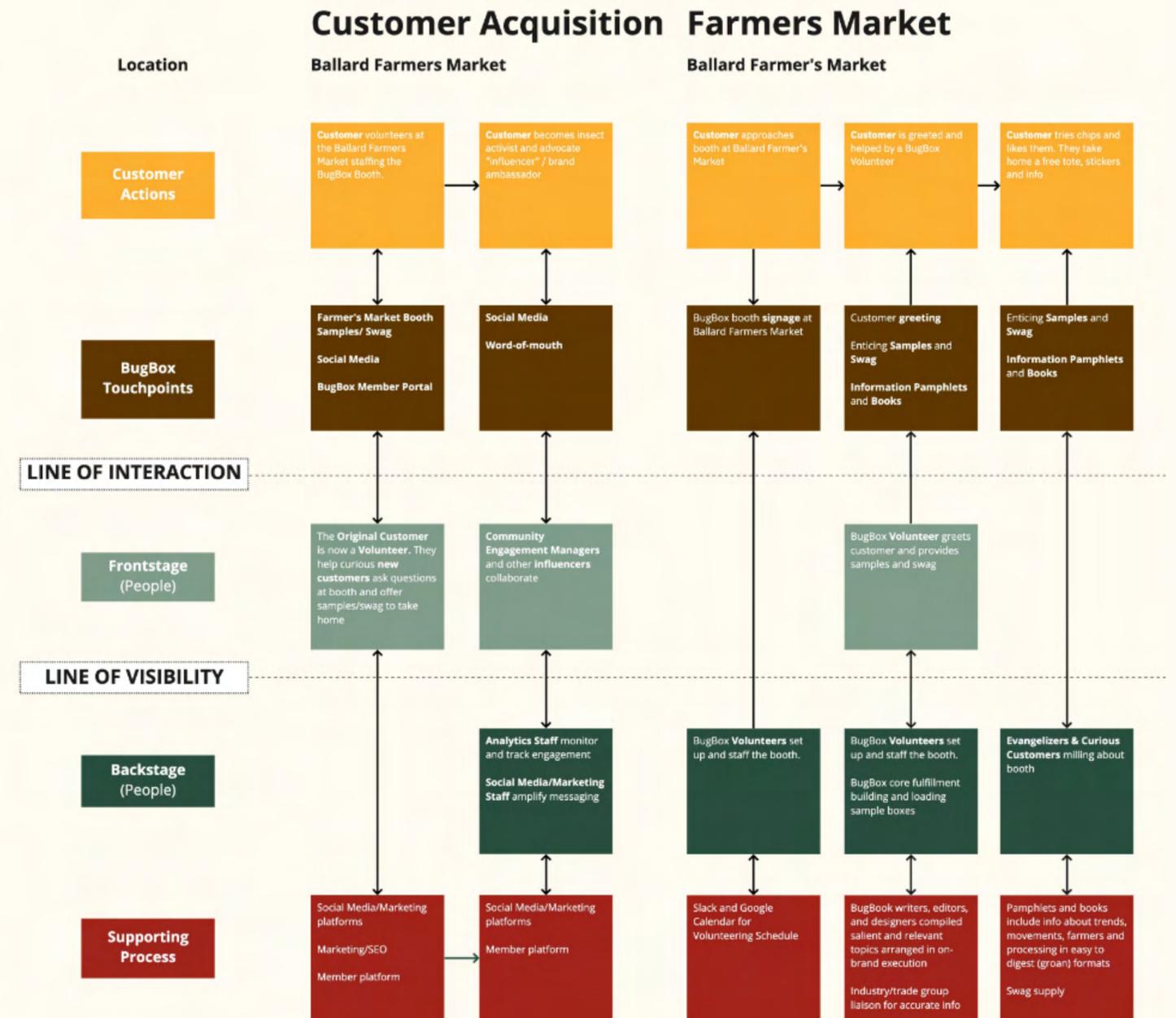
"The rush of all this positive reinforcement is so nice. So glad I gave that random box at the Farmer's Market a try. I really want to get the word out and invite other people to join this movement!"



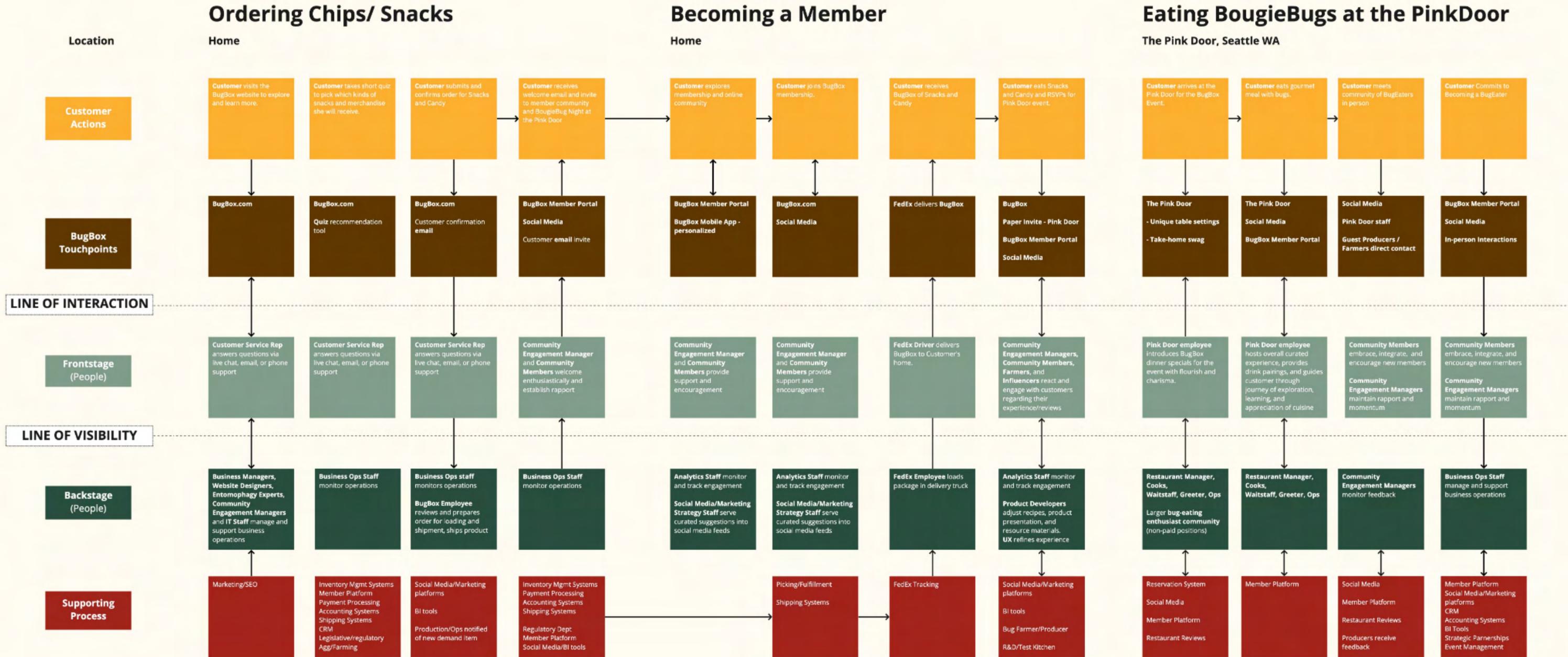
# Service Blueprint

## Phases of our Service Blueprint

- Marketing Customer Acquisition
- Farmers Market
- Ordering Chips/Snacks
- Becoming a Member
- Eating Bugs at the Pink Door
- Reordering the Box
- Attending Community Events
- Volunteering for BugBox



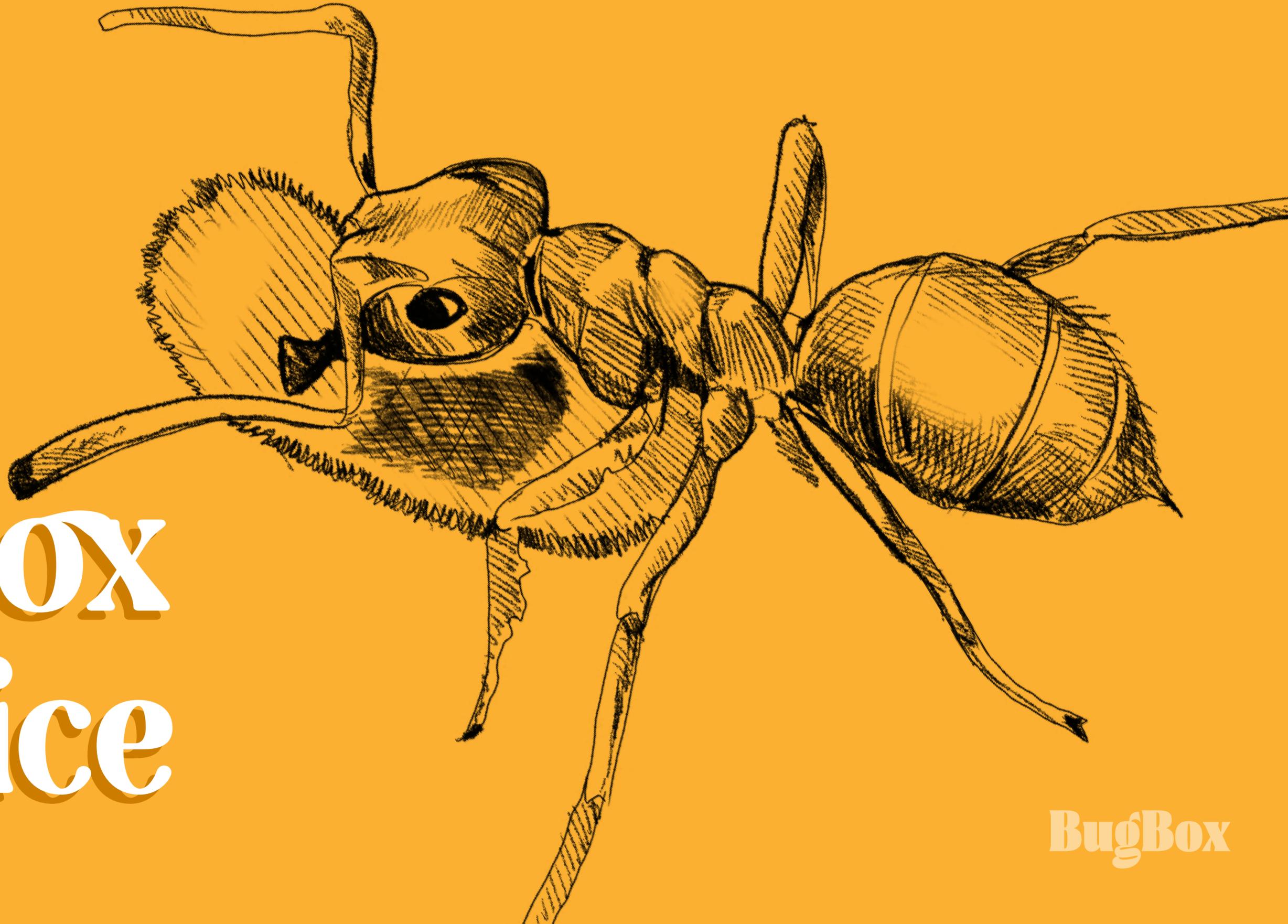
# BUGBOX SERVICE BLUEPRINT - CONTINUED



# BUGBOX SERVICE BLUEPRINT - CONTINUED

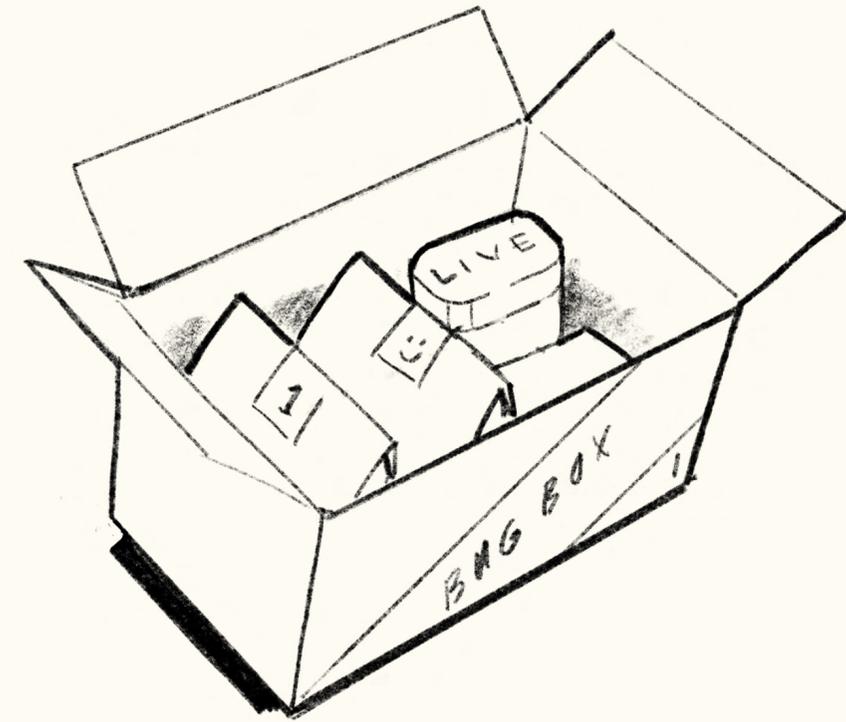


# The BugBox Service



BugBox

# How Adventurous are You?



*“Not very much...”*

*“I’ll try it if it looks good.”*

*“I’ll try most things.”*

*“I’ll try anything.”*

## Snacks

Chips, Cookies,  
Candy, and Savory  
Snack Mixes

## Proteins

Protein Powders,  
Shakes, and Bars

## Meal Delivery

Pre-Cooked Ready  
to Eat Meals

## Meal Kit

A kit with all the  
ingredients you need  
to cook a healthy,  
bug-filled meal.

# BUGBOX MEAL KIT



# BUGBOX RECIPE CARDS



seasonal special!

-serving suggestion

## Black Ant Guacamole with Black Ant Salt and Chickpeas

For an innovative game day snack or savory hors d'oeuvres, we've harmonized the subtle flavors of black ant salt and succulent avocados in this delicious bowl, which also includes yucca Manchego, fried spiced chickpeas, and crispy grasshopper croquettes. Use it as a dip for veggies or Cricket Tortilla Chips. Your ingredients are sourced within 150 km to reduce emissions, and all packaging is responsibly produced and recyclable.

total time	nutrition	impact
 15 minutes prep 5 minutes cook	 600 calories 22g carbohydrate 32g protein	 -1.5g CO2 +30 gal H2O -10g CH4

Check out these special ingredients!



we ♥ ramen!

-serving suggestion

## Insect Tsukemen Ramen with Peppers and Silkworm Flavor

Enjoy steaming, savory ramen bowls topped with dried seaweed and thinly sliced boiled eggs. This insect tsukemen is served with delectable spiced crickets atop mealworm-peppered noodles, swimming in a rich silkworm powder broth. Includes bowl of ramen paired with fried crunchy-worm spring rolls, and cricket infused rice. Your ingredients are sourced within 150 km to reduce emissions, and all packaging is responsibly produced and recyclable.

total time	nutrition	impact
 20 minutes prep 15 minutes cook	 450 calories 42g carbohydrate 25g protein	 -2.9g CO2 +50 gal H2O -20g CH4

Check out these special ingredients!



new recipe!

-serving suggestion

## Saucy Cricket Nachos with Black Olives and Jalapenos

We've packed this version of nachos with an impressive load of toppings including our special cricket "meat", Cricket Tortilla Chips, refried beans, jalapenos, black olives, and onions. But you can top your nachos with whatever you want; we recommend guacamole, cotija cheese, and our spicy chapulines! Your ingredients are sourced within 150 km to reduce emissions, and all packaging is responsibly produced and recyclable.

total time	nutrition	impact
 20 minutes prep 15 minutes cook	 450 calories 42g carbohydrate 25g protein	 -2.9g CO2 +50 gal H2O -20g CH4

Check out these special ingredients!



BUGBOX MEMEBERSHIP

# Community Centered

## In-Person Events

We encourage the exploration of new experiences and cuisines through in-person events where new members can mingle and feel that they are part of a community of BugEaters.

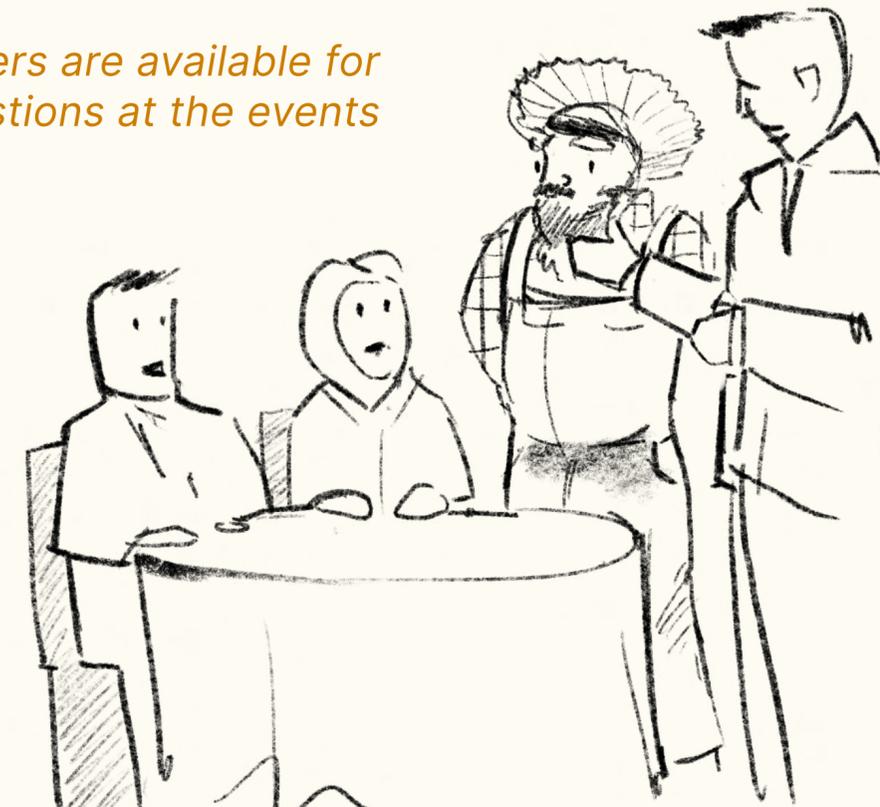
## Community Support

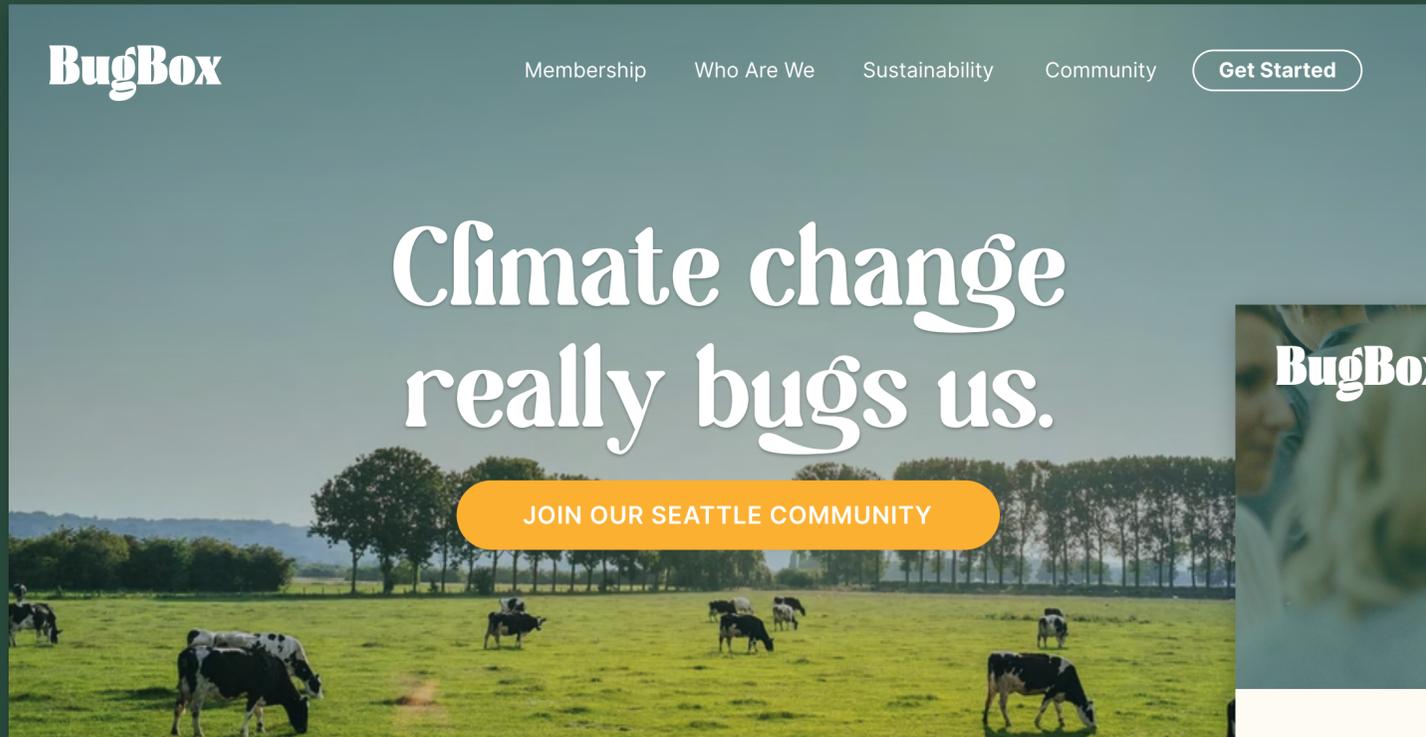
Through online forums and in-person support, members feel that they can cook and consume bugs in their own homes. With this support system they can change their behaviors and continue this new journey of eating bugs.

*Members get invites mailed in their BugBox*



*Bug farmers are available for any questions at the events*



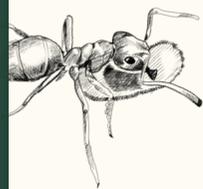


# Climate change really bugs us.

[JOIN OUR SEATTLE COMMUNITY](#)



## Insect Based Foods, Straight to Your Door



1

Choose delicious meals and extras

2

We deliver fresh each week or month

3

Ready-to-Heat or Cook from Scratch

4

Skip or cancel anytime



# A Community of BugEaters

## Upcoming Community Events

Become a member to join us for these upcoming events! It's free to join!



### Italian Cooking with Bugs

If you prepare insects well, they look good to eat – Mai Thitiwai

Learn the new techniques with your favorite italian cuisine.

[VIEW EVENT DETAILS](#)

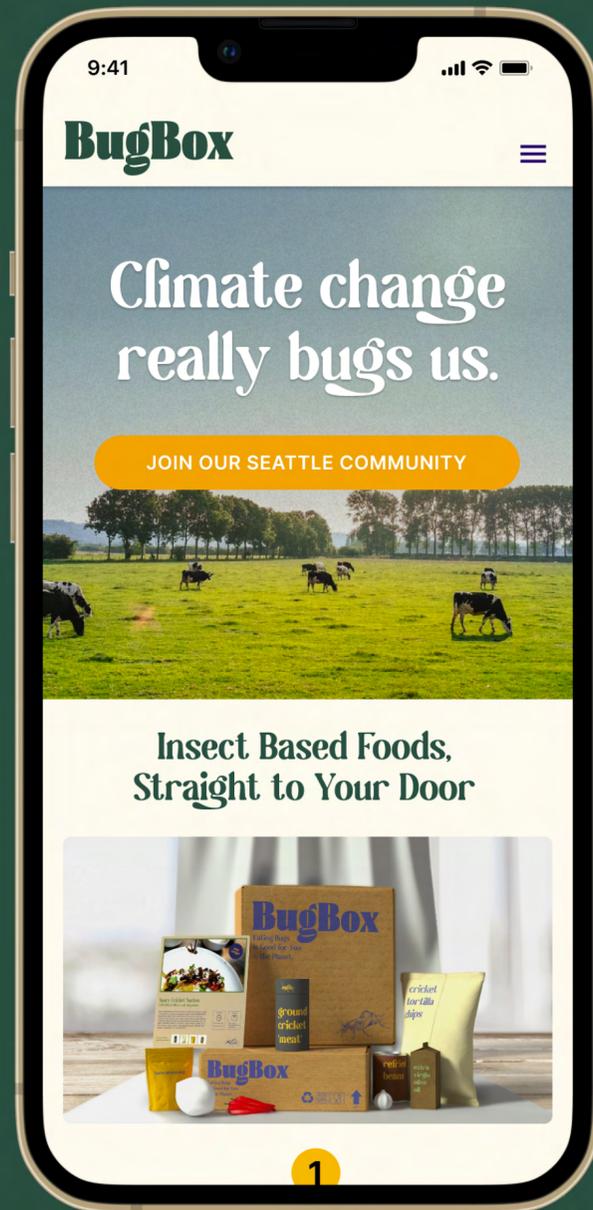


### Adopting New Eating Practices

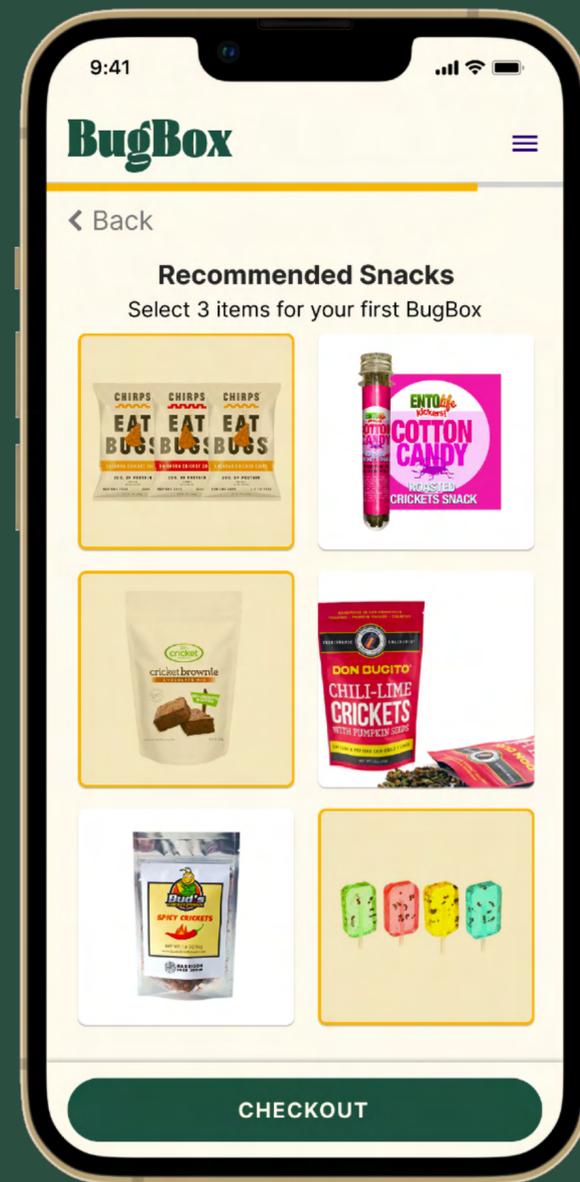
Eating bugs isn't a new thing, but why aren't more people doing it? Learn about the history of entomophagy.

[VIEW EVENT DETAILS](#)

# BUGBOX.COM SIGN UP & CHECK OUT FLOW



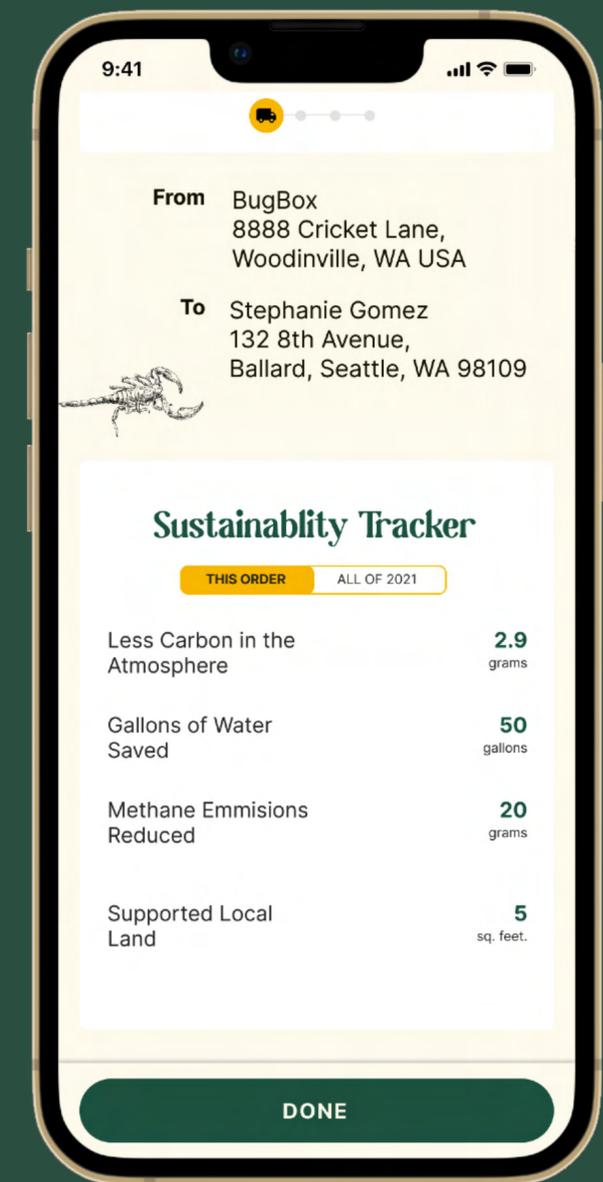
MOBILE-FIRST SIGN-UP & SHOPPING EXPERIENCE



PERSONALIZED PRODUCT RECOMMENDATIONS



PREVIEW OF MEMBERSHIP ONLY INVITES



ENVIRONMENTAL IMPACT TRACKER

**RESILIENCE**



**SUSTAINABILITY**



**COMMUNITY**



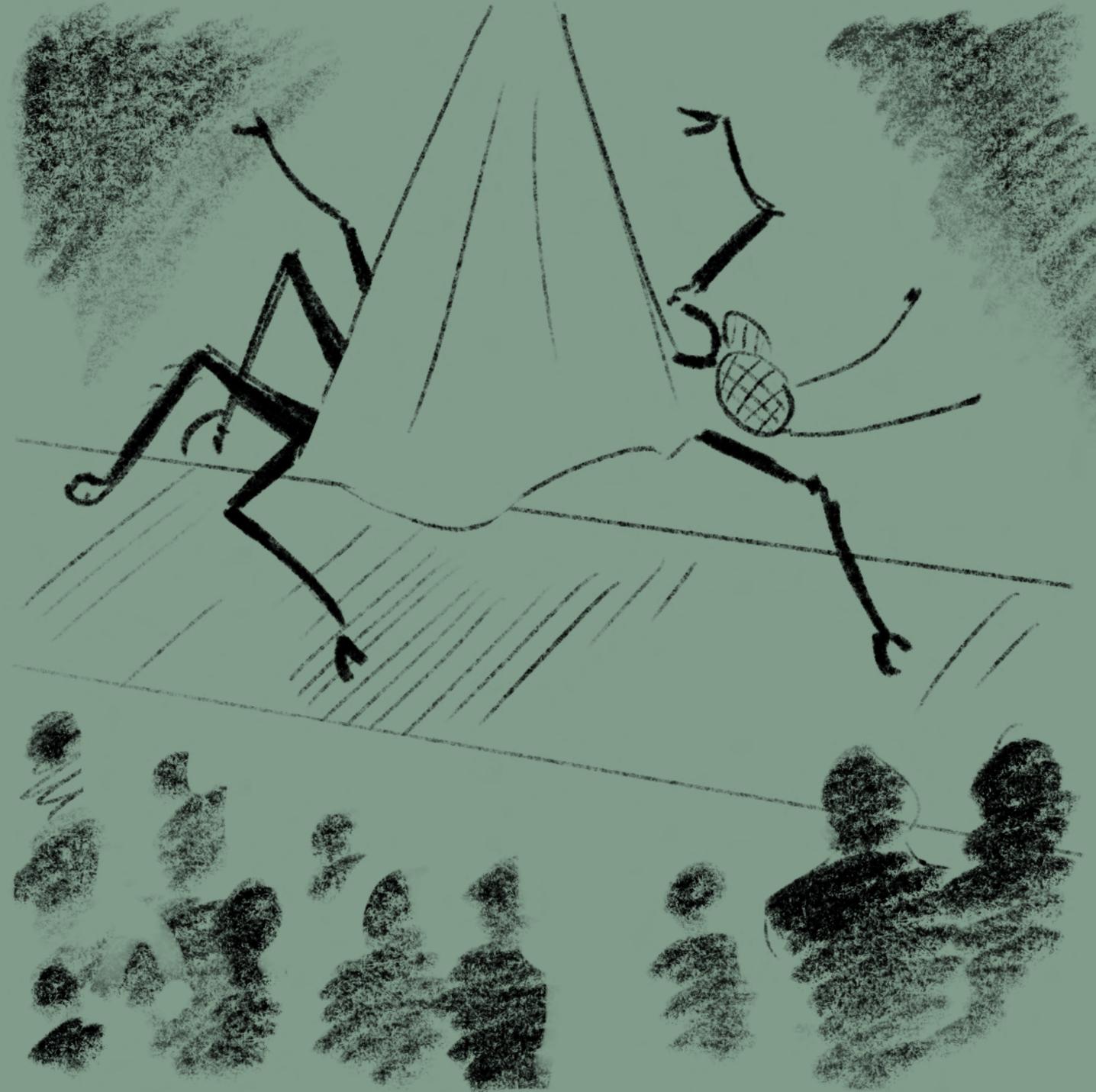
**TRUST**





Go Forth  
and Eat  
Bugs.

**BugBox**



# Appendix

# BRANDING STANDARDS

## LOGO



## FONTS

Wordmark

**Caline**

Headers

**Magilio**

Body

**Inter**

## COLOR PALLETE

### Primary Colors



**Resilient Red - Bold**  
#DB2218



**Resilient Red**  
#B31A1F



**Resilient Red - Dark**  
#640003



**Gumptious Green - Light**  
#819C8B



**Gumptious Green**  
#2A4E4



**Gumptious Green - Dark**  
#12231D

### Secondary Colors



**Yummy Yellow**  
#FCB031



**Yummy Yellow - Dark**  
#CC7D00



**Promising Purple - Light**  
#545694



**Promising Purple**  
#2B1174



**Bountiful Brown**  
#6E4200



**Boundless Black**  
#2B2B2B



**Cream**  
#FEFBF2

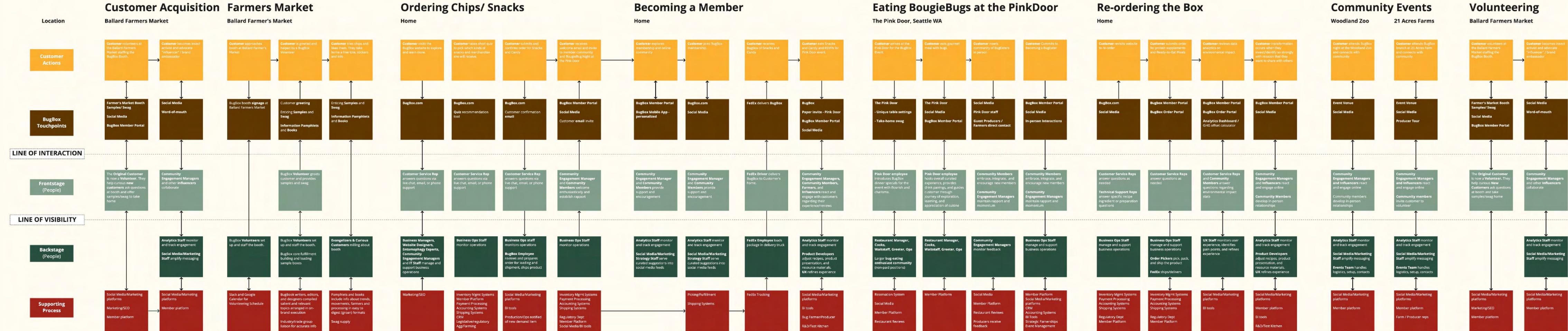
BUGBOX SWAG







# Service Blueprint



## CITATIONS

# Citations

## PHOTOGRAPHY

Farmer in Field Photo by Rebecca Ritchie on Unsplash

Pasta Photo by Sorin Popa on Unsplash

Children Eating Photo by Angela Mulligan on Unsplash

Bougie Bugs Event Photo by Priscilla Du Preez on Unsplash

Cattle in Field Photo by Leon Ephraïm on Unsplash

Community Photo by Edgar Castrejon on Unsplash

Tomatoes Photo by Elaine Casap on Unsplash

Hamburger Photo by Eiliv-Sonas Aceron on Unsplash

Onion Rings Photo by Esperanza Doronila on Unsplash

Mushroom Pasta Photo by charlesdeluvio on Unsplash

Squash Soup Photo by Cala on Unsplash

Steak Photo by Chad Montano on Unsplash

Tzaziki Photo by Mor Shani on Unsplash

Nachos Photo by Coffeefy Workafe on Unsplash

Pho Photo by Kirill Tonkikh on Unsplash

Rolls Photo by Brittany Piger on Unsplash

Shrimp Gnocchi Photo by Marika Sartori on Unsplash

Orange Chicken Photo by Drew Taylor on Unsplash

Shrimp Tacos Photo by Daniel Arriola on Unsplash

## ICONS

Cricket Icon by Grégory Montigny on Noun Project

Growth Icon by UNiCORN on Noun Project

Grain Icon by Turkkub on Noun Project

Cow Icon by Icons Producer on Noun Project

Earth Icon by Greer Mosher on Noun Project

## ASSETS

T-Shirt Mockup by BONFIRE on Figma

Tote Mockup by Mockey.co