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# Pollution Prevention



A PROGRAM OF  HRDC

# Agenda

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# Introductions

## Researcher Profile

**About Me:**

**Brynne Hitchcock**  
**Park City, UT**



**Bachelor's in Hospitality Management (Spring 2024)**  
**Master's in Public Administration (Spring 2027)**

*Developing and implementing methods for upcycling food waste through community and classroom engagement.*

# Introductions

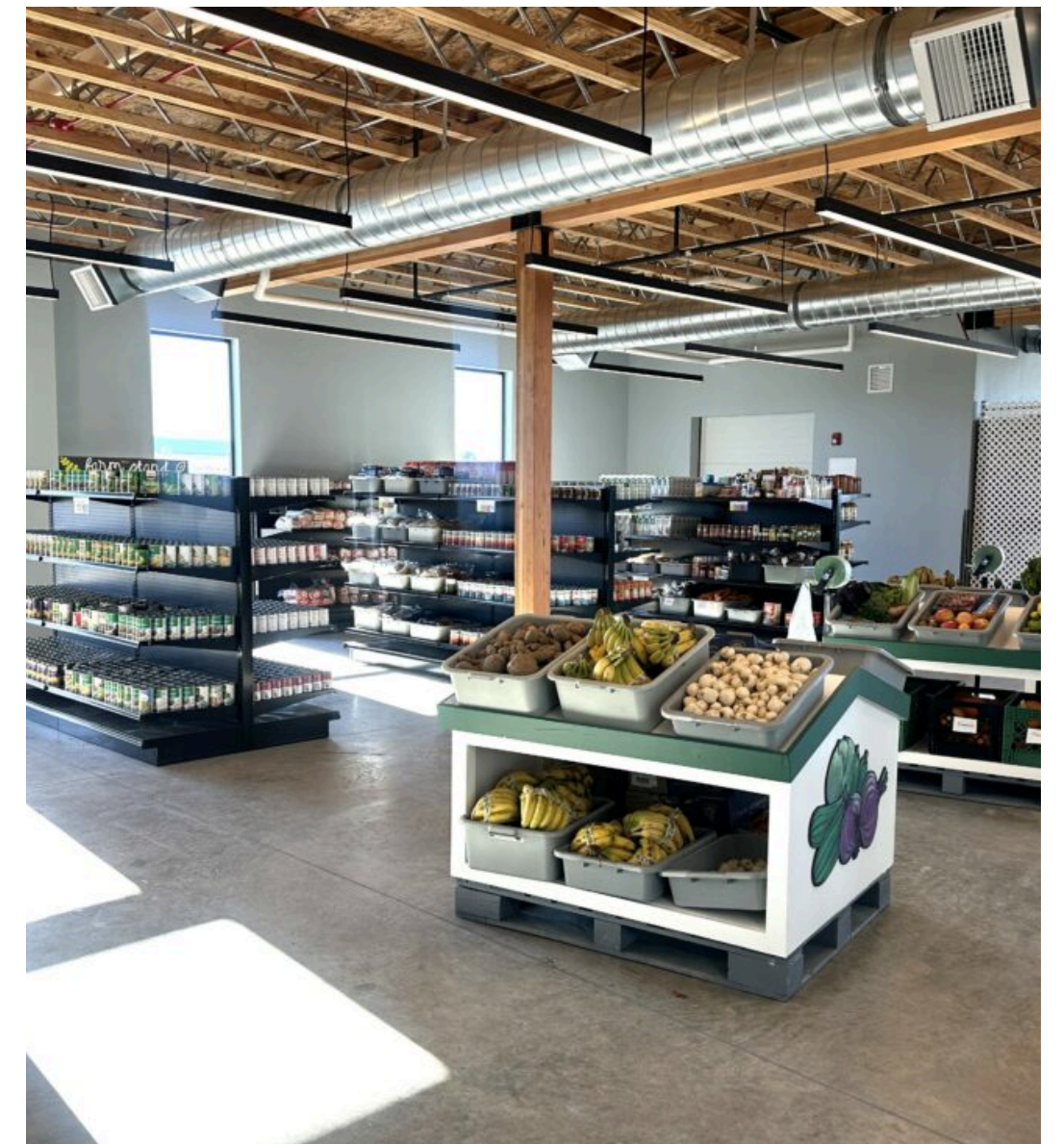
## GVEFB + HRDC Food and Nutrition Department

### Services:

- Food Bank
- Fork and Spoon
- Summer Lunch
- KidsPack
- Senior Groceries

### Reach (2022 - 2023):

- Food Banks: 1,811,331 lbs
- Food Boxes: 25,617
- Fork and Spoon: 34,495 meals
- Summer Lunch: 42,447 meals





# Identified Areas of P2 Focus

## Efficiency Improvements:

- Summer Lunch Forecasting to Reduce Overproduction

## Implementation:

- Gleaning Initiative
- Restaurant Food Rescue



# Summer Lunch

# Summer Lunch Operations

The Summer Food Service Program (SFSP) is a federal initiative that provides free meals and snacks to children in low-income areas during the summer. HRDC's Summer Lunch program offers free breakfast and lunch to kids when school meals are unavailable. Children can enjoy nutritious meals with no applications or income verification needed.

**Overproduction:** When more meals are prepared than are served. Unused meals cannot be reimbursed or funded.





# Summer Lunch Locations

12:00 p.m. - 1:00 p.m. :

Hyalite Elementary  
Walton Homestead Park  
Story Mill Park  
Irving Elementary  
MSU Family and Grad Housing

1:00 p.m. - 4:00 p.m. :

Gallatin Valley Food Bank



# Summer Lunch

## Current Forecasting

**June 10-14:**

Efficiency: 73%  
Overproduction: 480

**June 17-21:**

Efficiency: 64%  
Overproduction: 580

**June 24-28:**

Efficiency: 64%  
Overproduction: 722

**July 1-5:**

Efficiency: 55%  
Overproduction: 554

# Summer Lunch

## Flow of Waste



**Human  
Consumption**



**Animal Feed**



**Compost**



**Landfill**

**Estimated Number of Meals for Preparation**

Calculate the number of Children's meals to prepare for each day  
 Week of: **7/15/2024**

Day of the Week:	Monday Breakfast 15-Jul		
Meal:	Number Estimated	Number Served	Production Difference
Hyalite Elementary	40	34	6
Walton Homestead Park	20	20	0
Story Mill Park	45	29	16
Irving Elementary	15	7	8
MSU Family and Grad Housing	35	17	18
Gallatin Valley Food Bank	30	24	6

Day of the Week:	Monday Lunch 15-Jul		
Meal:	Number Estimated	Number Served	Production Difference
Hyalite Elementary	40	34	6
Walton Homestead Park	20	20	0
Story Mill Park	45	29	16
Irving Elementary	15	7	8
MSU Family and Grad Housing	35	17	18
Gallatin Valley Food Bank	30	24	6

Day of the Week:	Tuesday Breakfast 16-Jul		
Meal:	Number Estimated	Number Served	Production Difference
Hyalite Elementary	40	41	-1
Walton Homestead Park	20	14	6
Story Mill Park	45	43	2
Irving Elementary	15	0	15
MSU Family and Grad Housing	35	17	18
Gallatin Valley Food Bank	30	15	15

Day of the Week:	Tuesday Lunch 16-Jul		
Meal:	Number Estimated	Number Served	Production Difference
Hyalite Elementary	40	41	-1
Walton Homestead Park	20	14	6
Story Mill Park	45	43	2
Irving Elementary	15	0	15
MSU Family and Grad Housing	35	17	18
Gallatin Valley Food Bank	30	15	15

Day of the Week:	Wednesday Breakfast 17-Jul		
Meal:	Number Estimated	Number Served	Production Difference
Hyalite Elementary	45	29	16
Walton Homestead Park	25	23	2
Story Mill Park	45	31	14
Irving Elementary	15	3	12
MSU Family and Grad Housing	20	12	8
Gallatin Valley Food Bank	30	56	-26

Day of the Week:	Wednesday Lunch 17-Jul		
Meal:	Number Estimated	Number Served	Production Difference
Hyalite Elementary	45	29	16
Walton Homestead Park	25	23	2
Story Mill Park	45	31	14
Irving Elementary	15	3	12
MSU Family and Grad Housing	20	12	8
Gallatin Valley Food Bank	30	56	-26

Day of the Week:	Thursday Breakfast 18-Jul		
Meal:	Number Estimated	Number Served	Production Difference
Hyalite Elementary	45	36	9
Walton Homestead Park	25	22	3
Story Mill Park	40	22	18
Irving Elementary	15	9	6
MSU Family and Grad Housing	20	13	7
Gallatin Valley Food Bank	30	20	10

Day of the Week:	Thursday Lunch 18-Jul		
Meal:	Number Estimated	Number Served	Production Difference
Hyalite Elementary	45	36	9
Walton Homestead Park	25	22	3
Story Mill Park	40	22	18
Irving Elementary	15	9	6
MSU Family and Grad Housing	20	13	7
Gallatin Valley Food Bank	30	20	10

Day of the Week:	Friday Breakfast 19-Jul		
Meal:	Number Estimated	Number Served	Production Difference
Hyalite Elementary	45	28	17
Walton Homestead Park	25	9	16
Story Mill Park	40	25	15
Irving Elementary	15	5	10
MSU Family and Grad Housing	15	11	4
Gallatin Valley Food Bank	30	37	-7

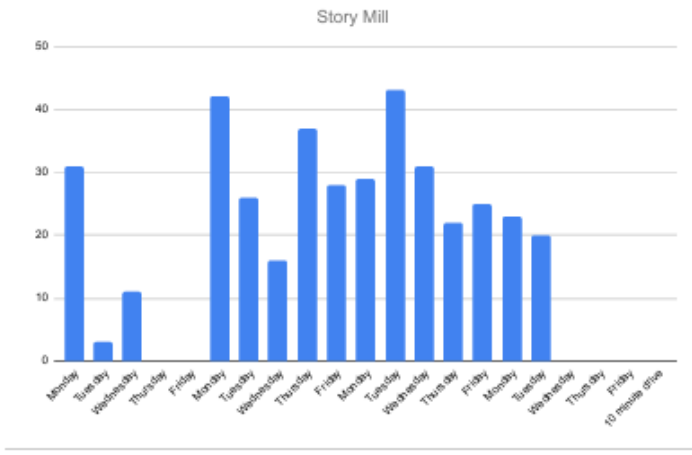
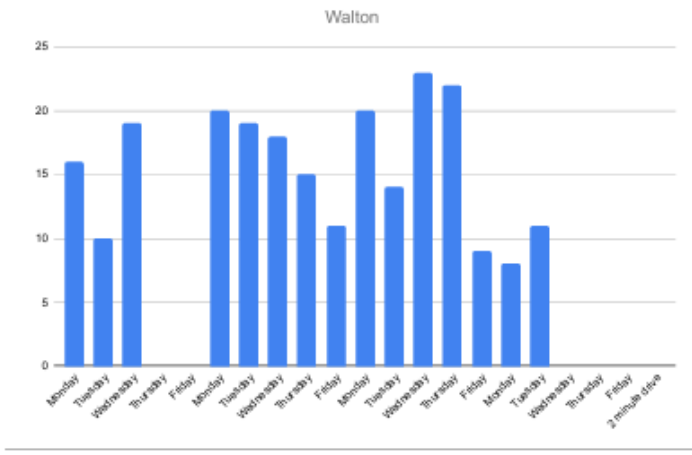
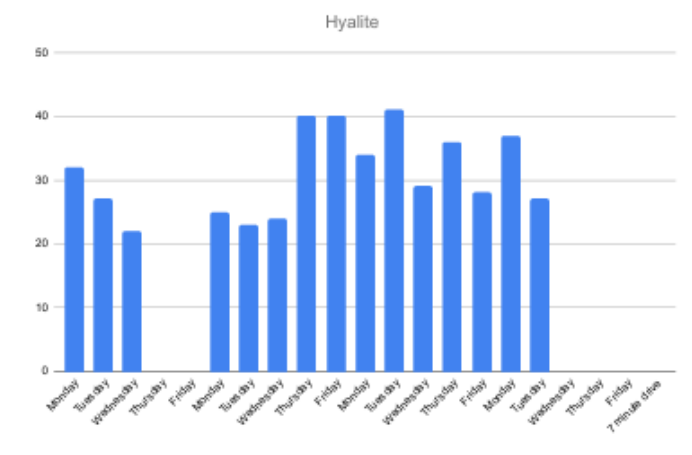
Day of the Week:	Friday Lunch 19-Jul		
Meal:	Number Estimated	Number Served	Production Difference
Hyalite Elementary	45	28	17
Walton Homestead Park	25	9	16
Story Mill Park	40	25	15
Irving Elementary	15	5	10
MSU Family and Grad Housing	15	11	4
Gallatin Valley Food Bank	30	37	-7

Location Weekly Averages Served		Production Difference	
Hyalite Elementary	34	Over Production:	554
Walton Homestead Park	18	Under Production:	-68
Story Mill Park	30		
Irving Elementary	5		
MSU Family and Grad Housing	14	<b>Weekly Production Efficiency</b>	
Gallatin Valley Food Bank	30	67.71%	Efficiency
		** key ** percentage of meals being served out of meals estimated	

**Weekly Totals:**  
1304 meals

Notes: Cells will autofill as monthly data is updated. Trendlines will begin to become apparent which should help guide the forecasting process. See previous months data for reference and additional assistance.

Location	Drive Time	Monday	Tuesday	Wednesday	Thursday	Friday
Hyalite	13 minute drive	32	27	22	25	23
Walton Homestead Park	7 minute drive	16	10	19	20	19
Story Mill Park	2 minute drive	31	3	11	31	3



Location	Drive Time	Monday	Tuesday	Wednesday	Thursday	Friday
Hyalite	13 minute drive	32	27	22	25	23
Walton Homestead Park	7 minute drive	16	10	19	20	19
Story Mill Park	2 minute drive	31	3	11	31	3





# Gleaning

# Gleaning

## What is it?

**“Gleaning programs organize volunteer gleaners to harvest a variety of leftover crops that are donated by farmers for the purpose of feeding food-insecure individuals. Thus, the gleaning process simultaneously reduces food waste and food insecurity (Ata et al., 2019)”**



# Gleaning Proposal



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## Goal:

To Glean 1 Acre of Unharvested Apples

## Method:

- Survey / Questionnaire
  - Volunteers
  - Farmers
- Farmers Market Outreach
- Bozone
- Social Media
- Newsletter

## Mission:

To create a replicable gleaning operation for future years and surrounding areas.



# ATTENTION FARMERS, GROWERS, VOLUNTEERS, AND VENDORS!

**WE ARE LOOKING FOR FARMS WITH LEFTOVER PRODUCE AT THE END OF THE SEASON AND VOLUNTEERS TO HELP US HARVEST.**

## FARMERS - GROWERS - LAND OWNERS

Support local food production by donating your surplus crops! Whether you have a few home grown apple trees or manage a larger orchard, your contribution helps reduce food waste and provides fresh, nutritious food to our community.

## VOLUNTEERS

Join GVFB and partners to harvest surplus produce, enjoy an on-farm experience, bring home fresh, local fruits and make a meaningful impact in our community! Volunteers will meet, disperse, harvest, and return with produce for distribution.

## VENDORS

If you have unsold produce after the market closes and cannot resell it, we are interested in collecting local produce to supply at the Gallatin Valley Food Bank. If interested reach out to Ali Thornton at [athornton@thehrdc.org](mailto:athornton@thehrdc.org)

If you or someone you know is interested in participating, complete a sign-up at [www.openlocalmt.org/community-harvest](http://www.openlocalmt.org/community-harvest) or scan our QR Code here:

## Gleaning Survey Partners and Volunteers

### Segmentation:

- Are you interested in establishing a *gleaning partnership* to provide unharvested produce, or would you like information about *volunteer opportunities*?
  - Gleaning Partnership
  - Volunteer Opportunities

### Gleaning Partnership:

- Your Name:
- Email:
- Phone Number:
- What is your preferred method of contact?
  - Phone Call
  - Text Message
  - Email
- Please select the category of your operation (multiple choice):
  - Commercial Farm or Ranch
  - Large Land Owner
  - Small Land Owner
  - Home Gardener
  - Other: \_\_\_\_\_ (please specify)
- Name of Operation (if applicable):
- What type of produce would you like collected?
- It is not required to have an organic operation to participate in the gleaning program. However, for food safety, we need to know some of your production practices. Have you



# Gleaning Goal Metrics

Recommended P2 Actions	\$		Annual Reductions		Was the Recommendation Implemented at This Facility?			Case Study Developed (Y or leave blank)
	One-time Cost to Implement (\$)	Annual Savings from P2 Action (\$)	MTCO2e Emissions (metric tons)	Water Use (gal.)	Y or N	If yes, fiscal year implemented (Oct. 1 - Sept. 30)	Comments	
Glean 1 Acre of Apples	-	\$6,534	1.200 MTCO2e	660430.13 gal	Yes	July 1, 2024 - June 30, 2025	Projected for date in September	Y
<i>10 bins of apples per acre in Montana, 2,000 apples per bin = 20,000 apples. Or (1 apple = 0.33 lbs) 6,600 lbs of apples source: USDA, 2019</i>		<i>\$0.99 - \$1.99 per lbs of apple. \$0.99 * 6,600 lbs source: USDA, 2024:</i>	<i>1 Apple = 0.06kg CO2e : 20,000 * 0.06 source: CO2 Everything</i>	<i>1 Apple = 125L of Water: 20,000 * 125L source: Your Water Footpring, 2014</i>				



# Restaurant Food Rescue

# Restaurant Food Rescue Proposal



## Goal:

To Introduce 10 New Partners to the Restaurant Food Rescue Route.

## Method:

- Target 50+ Restaurants
- Survey / Questionnaire
  - Local Restaurants
  - Chain
- Handouts
  - Informational Packets

## Mission:

Collect surplus, edible food in Bozeman and introduce it to the GVFB.

# HEY YOU!



Are you interested in making a significant impact through our Food Rescue program? We are seeking partner restaurants who are interested in donating surplus food that is still safe and edible to the Gallatin Valley Food Bank. By redirecting this food to those in need, we can minimize food waste and ensure it reaches those who need it most.

## Operations


**Evaluation at Your Location:** Gallatin Valley Food Bank will visit your restaurant to evaluate how much food can be redistributed to those in need.


**Requirements and Guidance:** We'll discuss what is needed from your restaurant, including freezing capabilities. Containers can be provided if necessary.


**Types of Food Accepted:** We accept both prepared and unprepared food that is pre-consumption and still safe to eat.


**Convenient Pickup Service:** Food rescue involves us collecting the donated food directly from your location, making the process seamless for you.

## Benefits of Partnering with Us

 **Storage and Freezing Capability:** We have the infrastructure to store and freeze large quantities of food, ensuring that your donations are put to good use.

 **Tax Deductible Receipts:** You will receive receipts for tax deductible donations, providing financial benefits to your business.

 **Environmental Impact:** When you practice food rescue from landfills, you help reduce CO2 emissions by up to 5 pounds for every pound of food diverted.

 **Education on Food Waste:** Learn which items are compostable when food can't be donated, and explore how diverting waste can impact our community socially and environmentally. We'll regularly update you with food rescue metrics!

 **Promotional Opportunities:** We are pleased to offer shoutouts on our social media platforms, showcasing your commitment to community support and attracting new customers.

# WHAT TO DONATE

## And what not to....



### ACCEPTABLE FOOD

- Unserved foods stored below 41°F for up to 72 hours after prep.
- Produce that is firm and not moldy.
- Dairy products up to 7 days past the "sell by" date.
- Deli items (salads, sandwiches, etc.) up to 3 days past prep date.
- Baked goods up to 3 days past prep date.
- Frozen meats and meals within 4 months of prep date.
- Non-perishable items (canned, packaged, and bottled goods).

### UNACCEPTABLE FOOD

- Food served or returned from eating area.
- Perishable that have been in the danger zone for 2 hours or more.
- Sprouts or sandwiches/salads containing raw sprouts.
- Baked potatoes wrapped in foil or stored in airtight containers.
- Opened packages of food.
- Products that have been thawed and refrozen.
- Sushi or shellfish.
- Home-prepared foods.



### TO ENSURE SAFE, CONVENIENT DONATIONS...

- Refrigerate perishable donations below 41°F or freeze them.
- Avoid mixing incompatible foods in containers (e.g., meats with desserts).
- Label each donation with preparation date.
- Our driver will pick up your donation and provide a monthly receipt.

### DID YOU KNOW...

that food waste accounts for about 8% of global greenhouse gas emissions? Americans lead the world in food waste, generating an estimated 170 million metric tons of carbon dioxide emissions annually — the equivalent to the CO2 emissions of 42 coal-fired power plants! Nearly 40% of this waste consists of edible fresh fruits and vegetables.

By donating to the Gallatin Valley Food Bank, you're not only reducing your restaurant's food waste and carbon footprint but also helping to feed over 9,000 individuals in need through our food rescue programs!



# Restaurant Food Rescue

## Goal Metrics

Recommended P2 Actions	\$		Annual Reductions	Water Use (gal.)	Was the Recommendation Implemented at This Facility?			Case Study Developed (Y or leave blank)
	One-time Cost to Implement (\$)	Annual Savings from P2 Action (\$)	MTCO <sub>2</sub> e Emissions (metric tons)		Y or N	If yes, fiscal year implemented (Oct. 1 - Sept. 30)	Comments	
Introduce 10 New Restaurant Partners to the Restaurant Food Rescue Program (25,560 lbs )	-	\$77,191	78.47 MTCO <sub>2</sub> e	371,373.07 gal	Yes	July 1, 2024 - June 30, 2025	Projected for date in September	Y
<i>The average GVFB Restaurant Partner donates 213 lbs of food per month and therefor 2556 lbs a year (213 * 12). If 10 restaurants are introduced, 25,560 lbs of food rescued annually. 1 lbs =1 meal. source: Second Harvest</i>		<i>\$3.02 = National Average Meal Cost. \$3.02 * 25,560 source: Feeding America</i>	<i>Average CO<sub>2</sub> of Meat Based Meals = 3.07 kg CO<sub>2</sub>e. 25,560 * 3.07 kgCO<sub>2</sub>e source: Takacs et al., 2022</i>	<i>1 Meal = 0.055 m3. 25,560 * 0.055 m3 source: Stern, 2022</i>				

# Reflections and Recommendations



## Personal Learning

- **Research Development:**
  - Grant Experience
  - Quantifying Results
- **Processes to Implementing Change**
- **New Routes of Food Rescue**

## Recommendations for P2 Interns

- **Discuss goals and deliverables with employer first week.**
- **Track and reflect on notes throughout Internship.**
- **GVFB: Assess Fork and Spoon Efficiencies**

## Recommendations for P2 advisors

- **Adapt to the differing needs of the student companies.**

# Acknowledgements

**FUNDING:** Environmental Protection Agency (EPA)

**LAND ACKNOWLEDGEMENTS:** “Montana State University is located upon the homelands of indigenous peoples: people with proud heritage, a vibrant present, and a bright future. We acknowledge the Assiniboine, Blackfeet, Chippewa Cree, Crow, Gros Ventre, Kootenai, Little Shell, Northern Cheyenne, Pend d’Oreille, Plains Cree, Salish, Sioux, Hidatsa, Mandan, Arikara, and the other indigenous nations of this region in the past, present, and future. We recognize that this rich human tapestry is central to our institutional mission of learning, discovery, and engagement.”

**SPECIAL THANKS:**

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**Thank  
you very  
much!**

