

KAMIKATSU, JAPAN

ZERO WASTE COMMUNITY

Michelle Haynes, *Assistant Town Manager*

Town of Mountain Village | Travel Date October 2023

Presentation Date June 20, 2024





COMMUNITY OVERVIEW





Location

- Shikoku Island
- 1 hour from Tokushima city

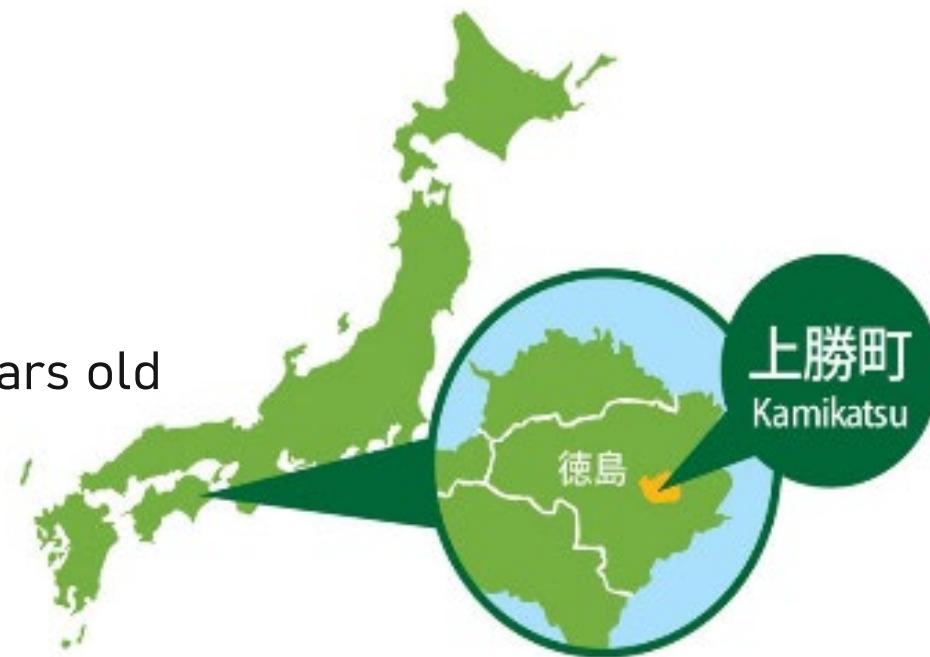
Geography

- > 80% is mountainous

[Kamikatsu: Inside the Zero Waste Town - YouTubeTown \(youtube.com\)](https://www.youtube.com/watch?v=...)

Population

- < 1,500 people
- 742 households
- > 50% are over 65 years old



ZERO WASTE HISTORY

In 2000 the village was forced to change the way it managed its waste because of new laws on dioxin emissions forced them to shut down two small incinerators. The community did not have the money to build a new incinerator or transport its waste to out-of-town facilities. They turned to a zero-waste concept to reduce, reuse and recycle as many items as possible while eliminate all waste being incinerated or placed in landfills.

The declaration indicated zero waste by **2020**.

The community started with a pilot program separating **22 types** of waste products which grew to **45 types** of waste products.

In 2023 the community pivoted to a sustainable culture expanded beyond zero waste

ZERO WASTE HISTORY CONT.

- In the intervening 20 years they have successfully **diverted 80%** of their entire waste stream
- The remaining **20%** is incinerated
- The amount of waste generated per person is about **half** of the national average
- The cost of waste disposal is **2/3 lower** than the national average
- The national average for recycling is **19%** in Kamikatsu it is **80.8%**

WASTE REDUCING SOCIAL HABITS



There are no public trash cans



There are no paper products for hand drying in public restrooms
The Japanese bring a handkerchief to dry their hands



Eating and drinking on trains is not customary, unless it's a few hour train ride - hence reducing waste



The Japanese do not take food or drinks "to go"
You eat take out or drink or eat to go items at the shop/store



In hotels typically if you do a hot drink, the liquid is poured into a separate refuse container before the paper cup is recycled, to reduce on the refuse mess



Public Transportation is efficient and integrated (walk, bus, trains integrated app-based programs)

EDUCATION AND PERSPECTIVE

- Rather than seeing things like plastic as “waste” can reframe our minds to see everything as a “resource.”
- In Kamikatsu the local government, private companies, non-profits and the community all participated in their zero-waste goal in different ways.
- Finding **value** in things that had no value before





THE ZERO WASTE CENTER & WHY HOTEL

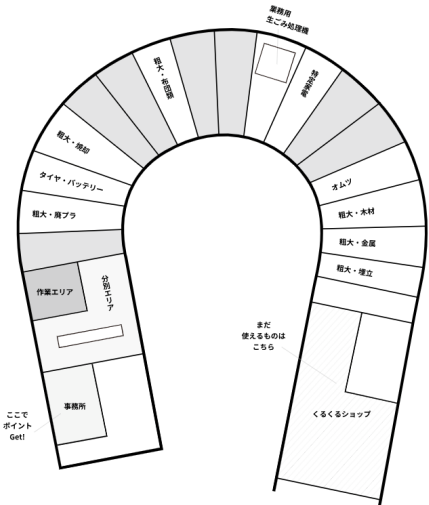


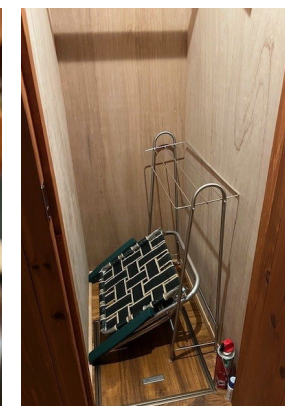


The Zero Waste Center opened in April of 2020. A facility and hotel for people who want to learn and experience zero waste.

Garbage “Gomi” Station is where residents bring and separate themselves

The facility contains the recycle center, reuse center, free box, thrift store, lab, laundry, community room, hotel.





HOTEL



**WHY BREAKFAST
GOOD MORNING
HAVE A GOOD DAY!!**

Mr. Maeno's bagle from Katsura
(No eggs or milk)

Kamikatsu green leaves

**Carrot rapees and
Tokushima sliced tomato**

**Tokushima speciality
Fish cutlet**

Feel free to heat up the bagle with
the toaster oven in the public hall.

✕OPEN 8:30AM
(Our vegetable supplier will be changed
depending on the season)

Kamikatsu Bancha tea granola
We take the powder and small bits of
'Awa bancha' tea that cannot be sold,
and repurpose it into home made
granola.

Yuko Achar Mayonnaise
Kamikatsu speciality Yuko and
Nepales spices are mixed with mayonnaise.
Please share with everyone in your room.

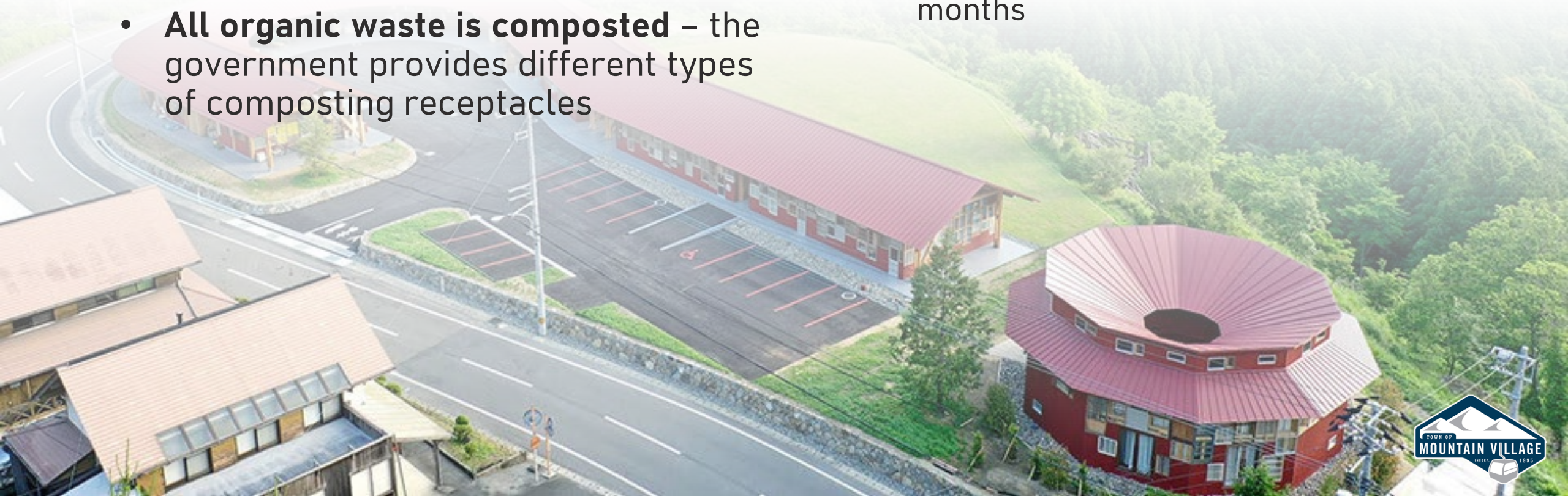
Minestrone
Please add hot water to the jar,
and ENJOY!

(PLEASE NOTE)
• Please leave the container in the room.
• If you are staying for two nights and more,
please bring the container to the reception.
• Please come to the reception to refill of
coffee beans and Kamikatsu Bancha tea.



WASTE CENTER

- **Kamikatsu recycles 45 types of materials** – lots of education and outreach on how each material is treated before bringing it to the recycling center and at the center
- **All organic waste is composted** – the government provides different types of composting receptacles
- **Challenges for an aging community**
 - Staff supports elderly residents
 - Households registered in the transportation support system will collect free of charge every two months





Each container has a label indicating disposal costs, purchase prices, waste destination and recycling information



The Kamikatsu equivalent of a free box area!



A built-in scale weighs trucks before and after being filled. The community tracks on the collection data.



RECYCLE FACILITY



Concrete floor made from crushed ceramics



Windows repurposed from local homes. Salvageable materials are resold in the hotel lobby



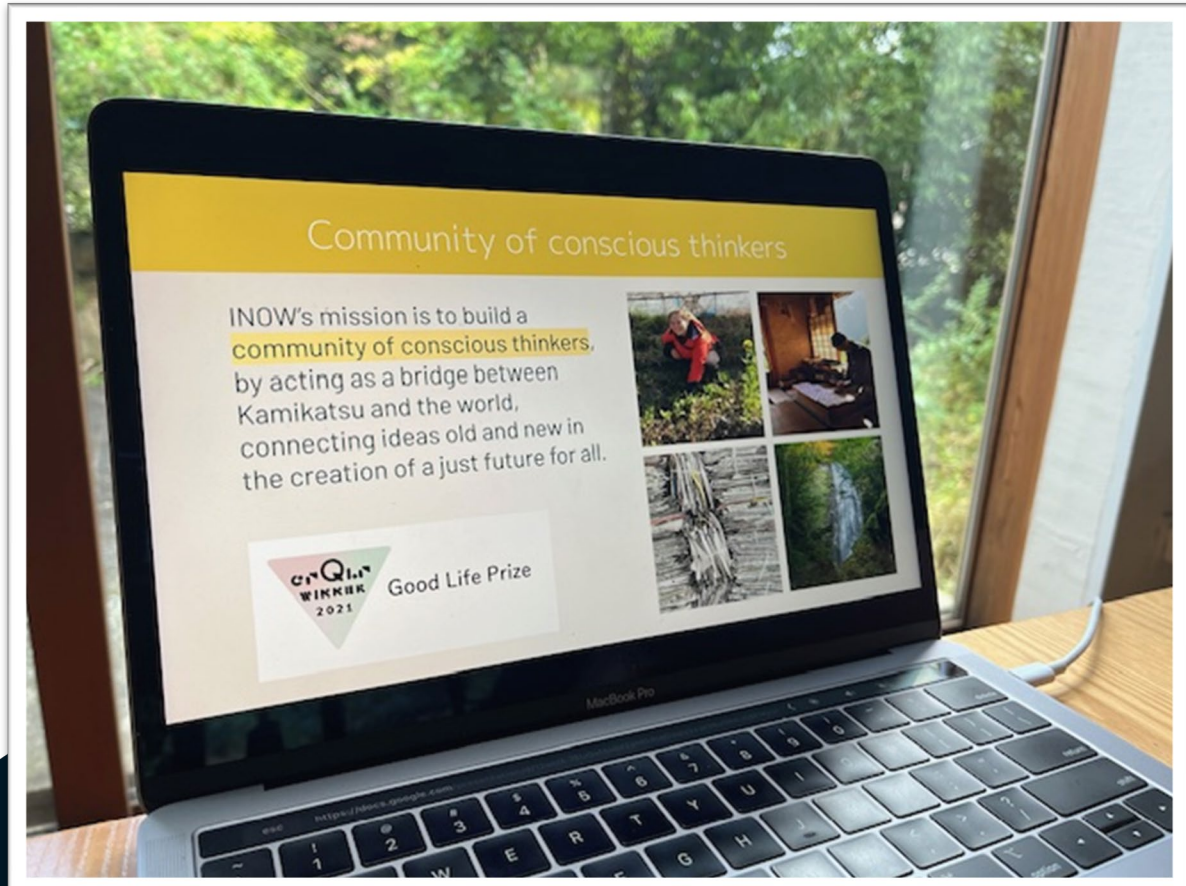
A community room with a child play area, kitchen and seating





TOUR





Sil Van de Velde
Kana Watando
and Terumi
Azuma (not
shown)



Lunch served by
the local café.
Decorative
leaves shown,
part of
Kamikatsu's
local economy,
industries

TOUR – INOW!

INOW – Means “Let’s go home!” A program developed by Kamikatsu residents to assist visitors and the community to understand sustainability and zero waste

The Mission is to build a **community of conscious thinkers** by acting as a bridge between Kamikatsu and the world, connecting ideas old and new in the creation of a just future for all.





NEW INDUSTRIES

INOW intends to connect culture with community

New industries in Kamikatsu:

- Café, a place for community members to meet
- Brewery
- Recycling Center and Hotel Complex (PPP Public Private Partnership)- on the site of the former incineration pit
- Decorative leaf industry
- Repurpose cedar trees on slopes (considered a nuisance) – make paper, fabric materials
- Tea growing
- Rice growing
- Thrift store
- Reuse craft store (reused fabrics and materials)
- Voluntary taxi service



GOVERNMENT OFFICES

Residents are provided a recycling guide and a compost container by the local government



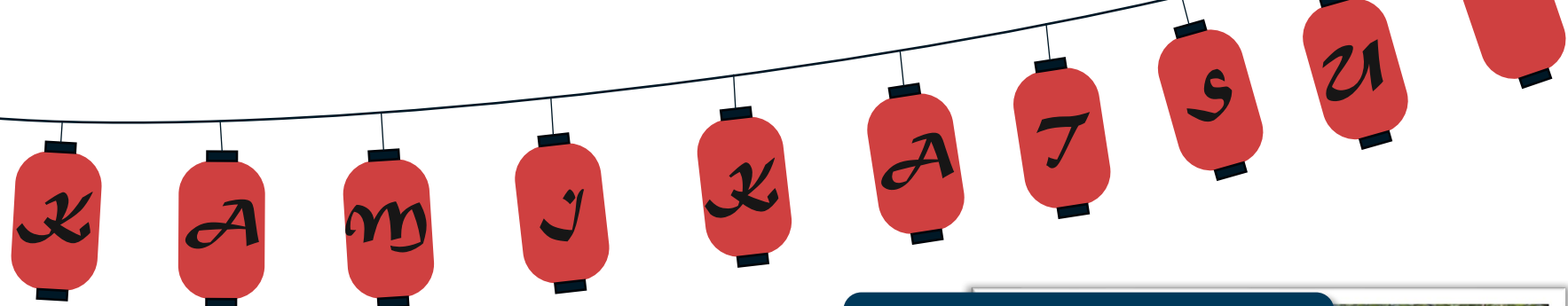
Met with Local Government Officials at their offices



Met with the Director of Sustainability. Discussed waste materials that are repurposed into reusable products



A pilot program of food trays for the local elementary school, repurposed from plastic waste material. Some plastics are melted and reformed into children's play blocks, planters and food trays, by way of example.



A tour of a heritage economy
– rice farming



Rice drying. Once dried, community members can bring the dried rice to grocery stores in the adjacent town which can then polish the rice to their liking.

RICE FARMING



SUMMARY

- Waste disposal costs can be reduced by 60% by sorting waste types
- The success of the program requires both regulation and education
- Drawing on public, private and government entities together to build success worked for Kamikatsu



RESOURCES

[ZERO WASTE ACTIONS \[Official\] RISE & WIN KAMIKATZ](#)

[INOW いのう – Your Home in Kamikatsu \(inowkamikatsu.com\)](#)

[Kamikatsu, Japan's zero-waste town, has lessons for a sustainable future – Washington Post](#)

[Kamikatsu: Inside the Zero Waste Town \(youtube.com\)](#)

[Japan's Town With No Waste \(youtube.com\)](#)



QUESTIONS

THANK YOU

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[@TOWNOFMOUNTAINVILLAGE](#)



MOUNTAIN VILLAGE, CO

GOAL OF BECOMING A ZERO WASTE COMMUNITY

Lauren Kirn, *Environmental Efficiencies & Grant Coordinator*

Town of Mountain Village

Presentation Date June 20, 2024



OVERVIEW OF ACTIONS

Plans

- Zero Waste Action Plan For Mountain Village, Telluride and San Miguel County, CO – published August 8, 2008
 - Sets goals of 50% diversion of solid waste from landfills and incinerators by 2011, 75% diversion by 2018, and 90% or greater diversion by 2025.

Ordinances & Resolutions

- 2022-07 Single Use Plastic Reduction Ordinance
- 2019-0718-13 Resolution to Establish Voluntary a Single-Use Plastic Reduction Initiative
- 2012-0719-14 Resolution to Establish a Disposable Plastic Bag Reduction [Voluntary] Program
- 2008-1016-12 Resolution to Establish a Goal of Zero Waste by 2025
- 2002-1112-26 Resolution to Revise Refuse and Recycling Collection Fees
- 1997-12 Ordinance Enacting Refuse and Recycling Collection Services

Incentives & Initiatives

- Planet Over Plastics
- Farm to Community Program
- Composting Incentive Program – 2024 to present
 - Target audience: businesses and HOAs
- VCA Composting Pilot Program – 2022 to present
 - Target audience: VCA residents
- Compost Incentive Program – 2020 to 2021
 - Target audience: residents
- Annual composting events
 - November 2021 to present
 - Target audience: local and regional public and businesses
 - Green waste collection pilot – summer 2024
 - Target audience: landscaping companies

RECYCLING IN MOUNTAIN VILLAGE

- All residents and commercial properties are required to recycle paper, cardboard, glass, plastic #1-7, aluminum products, and tin products.
- Recycling of plastic film and packaging is available at Town Hall and the VCA Main Office.
- Per State legislation, electronics are prohibited from landfills. Electronic recycling events take place twice per year and are hosted by EcoAction Partners.



DEFINING ZERO WASTE

Zero waste is the principle of minimizing waste production as much as possible, then composting, reusing, or recycling any other waste generated.

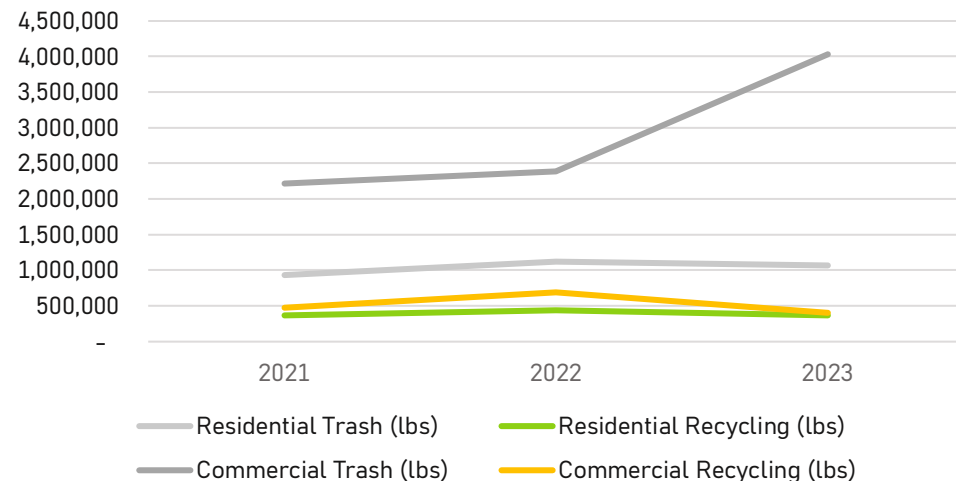
– World Economic Forum

TRASH & RECYCLING IN MOUNTAIN VILLAGE

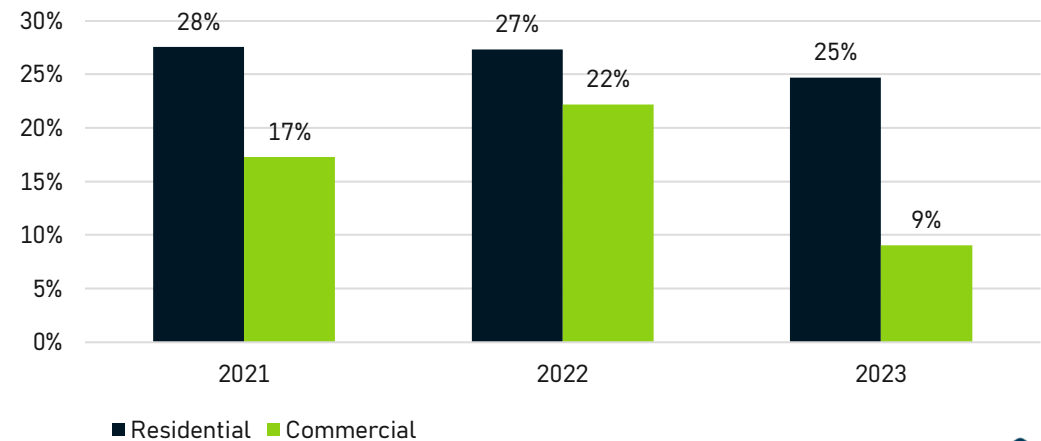
Key takeaways

- Mountain Village recycling rates are typically higher than Colorado’s statewide combined recycling and composting rate of 16%. The national combined rate is 32%.
- Residential rates are consistently higher than commercial diversion rates.
- Overall, the amount of trash being generated is increasing.
- Although recycling is required in Mountain Village, not all community members are complying.

Mountain Village Trash and Recycling Trends



Mountain Village Recycling Rates



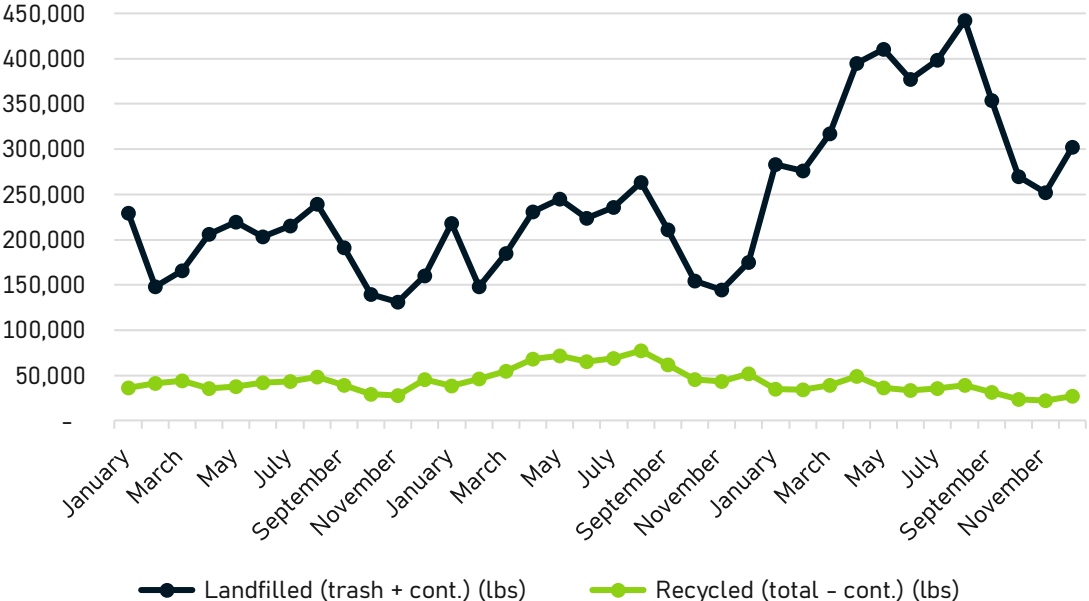
MOUNTAIN VILLAGE WASTE & RECYCLING TRENDS

Key takeaways:

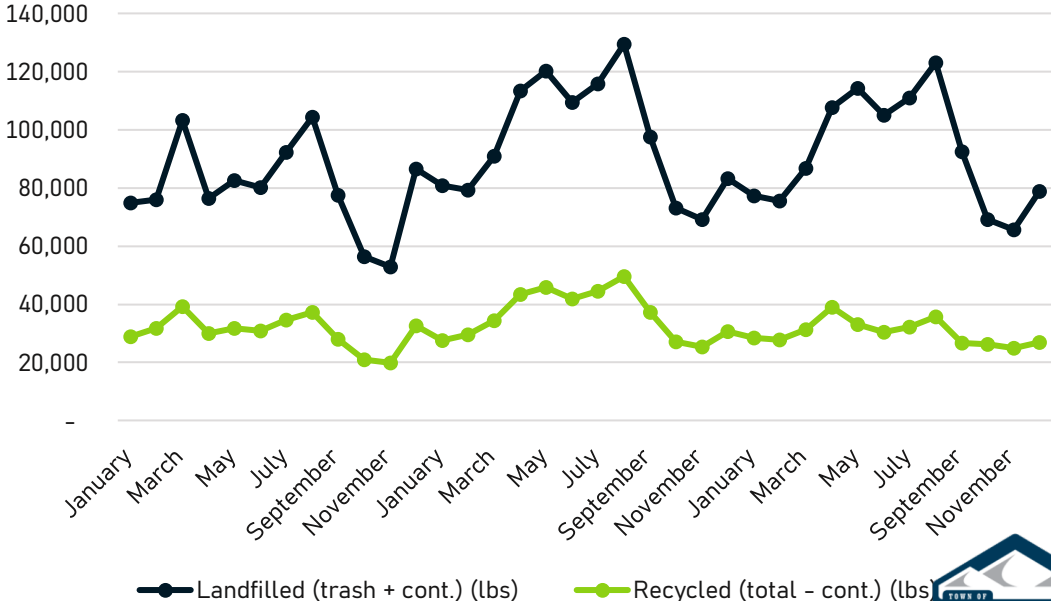
Commercial and residential waste and recycling follows a similar trend of:

- Consistent yearly peaks in August.
- Consistent yearly valleys before the end-of-year holiday season
- Increase in the holiday season/new year.

Commercial Waste Trends 2021-2023



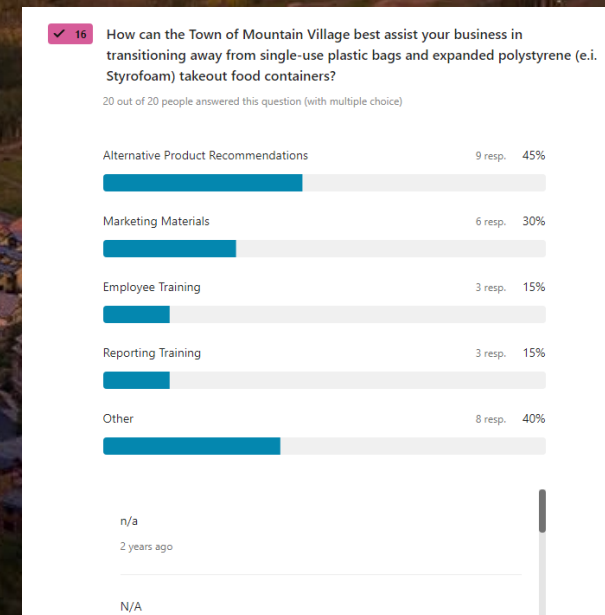
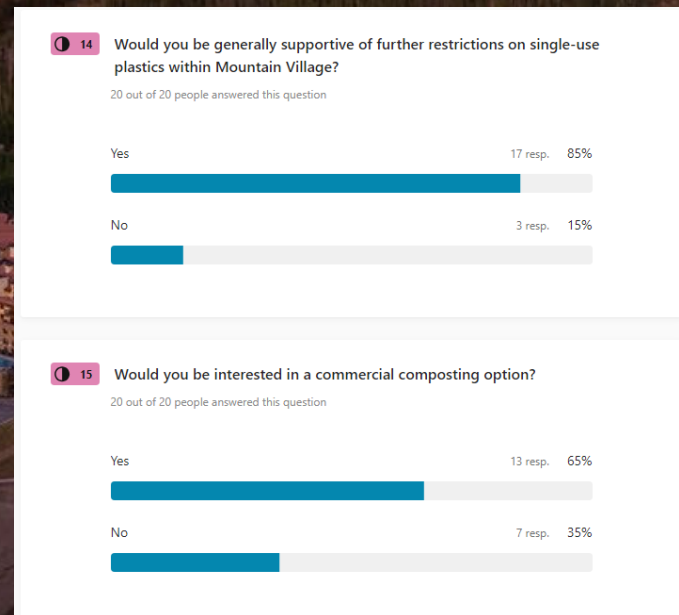
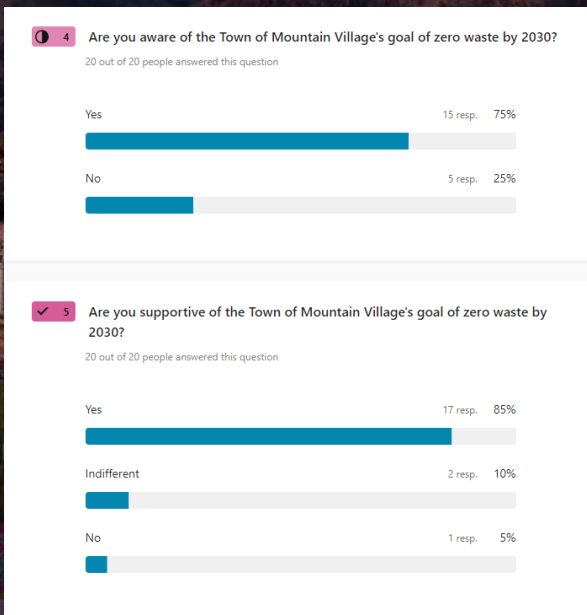
Residential Waste Trends 2021-2023



2022 SINGLE-USE PLASTICS SURVEY (BUSINESSES)

Key takeaways:

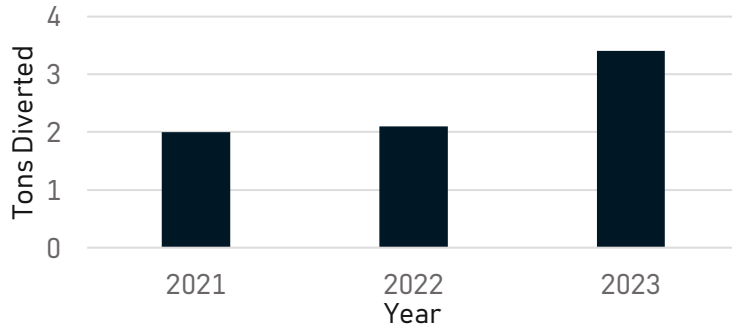
- Most businesses in Mountain Village are aware of and in support of the Town's zero waste goals.
- Businesses are generally supportive of additional restrictions on single-use plastics.
- Commercial composting is of interest to businesses.
- Businesses would like Town staff to assist with recommendations for alternative products and with marketing materials.



COMPOSTING IN MOUNTAIN VILLAGE

- We have diverted over **12.02 tons** in 3.5 years without widespread commercial and residential composting services.
- Composting Incentive Program – New this year through a USDA grant award in collaboration with San Miguel County.
- VCA Composting Pilot Program – 2022 to present
 - Diverted over 5,464 lbs (2.7 tons) to date
- Compost Incentive Program (at-home composting bins) – 2020 to 2021
 - Diverted over 2,101 lbs (1.05 tons) to date
 - Generated over 1,331 lbs (0.67 tons) of finished compost product
- Annual composting events
 - 2021: 2 tons
 - 2022: 2.2 tons
 - 2023: 3.4 tons

Amount of Compost Collected During November Events



EPA WASTE STUDY: TELLURIDE & MOUNTAIN VILLAGE

- EPA researchers performed a materials characterization of trash from the Franz Klammer (Mountain Village) and the Manitou Lodge (Telluride).
- Garbage was sorted into 22 categories.
- **2019:** approximately 8,000 pounds (4 tons) of trash collected during peak periods (summer and winter)
 - 75% was considered “recoverable.”
 - > 34% was recyclable (~1.36 tons)
 - > 41% was compostable (~1.49 tons); 31% of this was food waste
 - Trashed items of interest included a pair of snow boots, a toaster oven, a \$20 bill, Apple AirPods, cellphones, unopened food and beverages, and kids’ games.
- **2023:** The EPA will provide an update on their 2023 findings in July.



RECENT WASTE-RELATED LEGISLATION IN COLORADO

THE STATE OF COLORADO HAS STATEWIDE MUNICIPAL SOLID WASTE DIVERSION GOALS OF 35% BY 2026 AND 45% BY 2036.

Producer Responsibility Law ([HB22-1355](#))

Once fully implemented, ALL Coloradans will have convenient recycling access and a much higher percentage of the state's recyclable materials will be captured and returned to the supply chain, instead of landfilled.

Plastic Pollution Reduction Act ([HB21-1162](#))

Phase 1: implemented a statewide fee on single-use checkout bags that is estimated to reduce between 1.5 and 1.8 billion single-use checkout bags in Colorado each year.

Phase 2: starts January 2024; will ban polystyrene take-out food containers and single-use plastic checkout bags altogether.

Phase 3: starts July 2024; will lift the state preemption on local jurisdictions from banning plastics, creating opportunity for municipalities to take action to reduce plastics even further.

Colorado Department Of Public Health And Environment Organics Diversion Study ([SB23-191](#))

Directs the Colorado Department of Public Health and Environment (CDPHE) to evaluate and create a plan for organics diversion,

Directs CDPHE to provide local governments guidance to identify types of infrastructure fitting for their jurisdictions and basic tools to help build that infrastructure.

Standards For Products Represented As Compostable ([SB23-253](#))

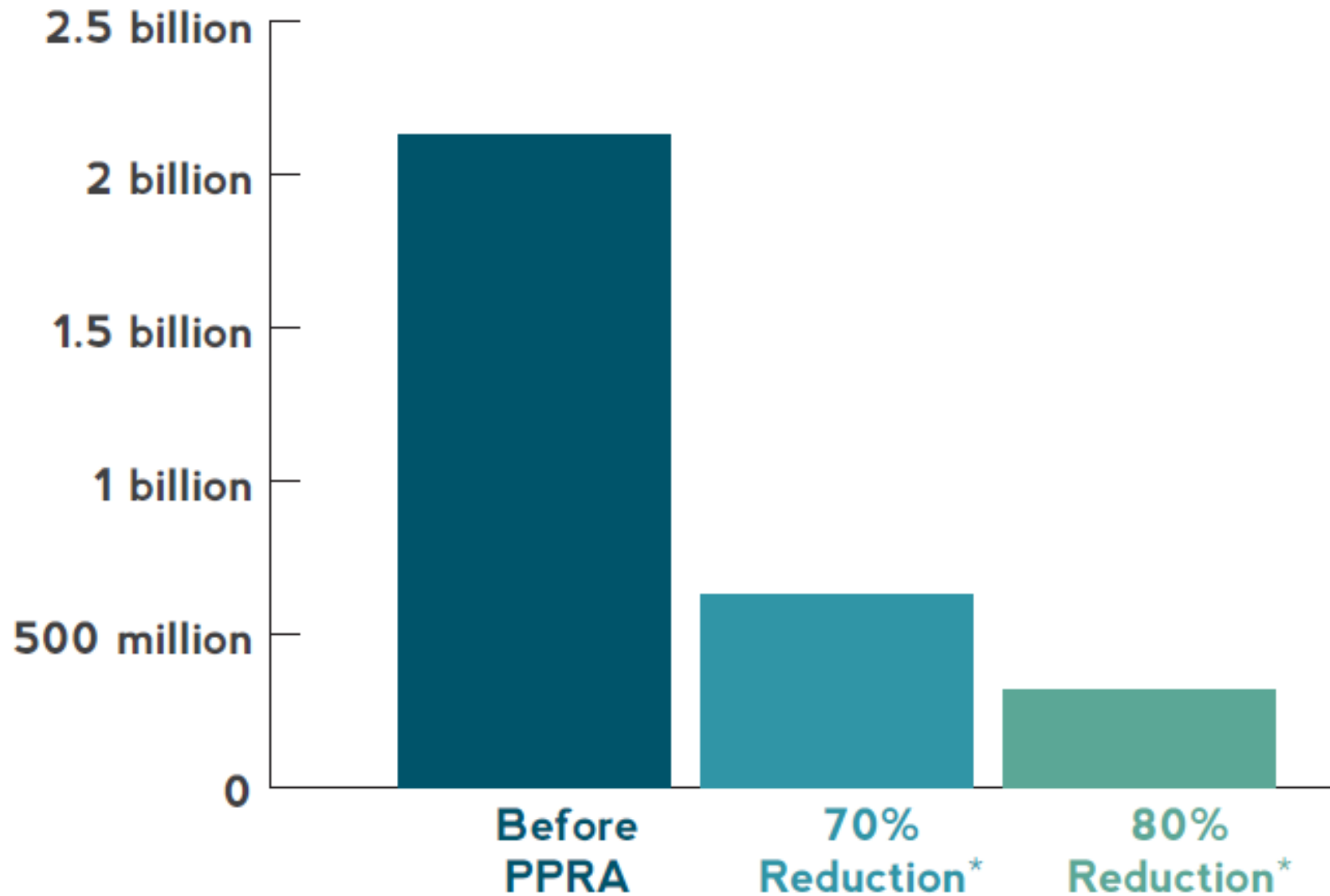
Seeks to eliminate confusion and greenwashing of product end-of-life by eliminating misleading labeling and requiring certification of compostable products

Consumer Right to Repair Digital Electronic Equipment ([HB24-1121](#))

All manufacturers to make it easier for consumers and independent electronics businesses to purchase the necessary equipment needed to repair devices themselves.



FIGURE 2: ESTIMATED REDUCTION IN SINGLE USE CHECK-OUT BAGS IN COLORADO



* Pre-PPRA bag use based on state population multiplied by estimates suggesting US residents use one bag per person per day. Estimated reductions based on actual results seen in the City of Boulder (70% reduction) and City of Aspen (85% reduction) after bag fee ordinance implementation.

FIGURE 1: STRATEGIES TO REDUCE: GOOD FOR THE ENVIRONMENT, GOOD FOR BUSINESS

In addition to the environmental and health benefits of reducing plastics, reducing unnecessary packaging and single-use items can save businesses significant amounts of money. Asking first how many items customers need or providing self-serve stations rather than automatically providing items can easily reduce plastics. Learn more about cost savings in Eco-Cycle's [Guide to Sustainable Serveware](#).

Current Scenario						Reduction Scenarios					
Item	Cost per item*	Avg. # of customers per day	Avg. # of units given per customer	Units provided per year	Cost per year	Reduce: 50%		Reduce: 75%		Reduce: 90%	
						Units provided per year	Cost per year	Units provided per year	Cost per year	Units provided per year	Cost per year
Straw	\$0.01	150	1	54,750	\$548	27,375	\$274	13,688	\$137	5,475	\$55
Ketchup packet	\$0.05	150	3	164,250	\$8,213	82,125	\$4,106	41,063	\$2,053	16,425	\$821
Utensil packet: fork, knife, spoon	\$0.04	150	1	54,750	\$2,190	27,375	\$1,095	13,688	\$548	5,475	\$219

*Cost based on prices for items on webstaurantstore.com as of July 2023.

Source: Eco-Cycle's *The State of Recycling and Composting in Colorado 2023*

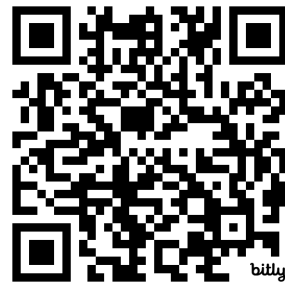


CHALLENGES

- Cultural shift
- Existing waste narratives
- Tourism population
- Staff capacity
- Enforcement
- Education
- Burden placed on individuals
- Items not within our control (e.g., production of goods)

OPPORTUNITIES

- Resolution to achieve Zero Waste or Darn Close (90% or greater)
- Learning from other communities (e.g., Kamikatsu)
- Local support
- Regional collaborations
- State and federal legislation
- State and federal funding
- Education & outreach
- Interns
- New services becoming available (e.g., Bruin Waste composting services)
- Business opportunities



<https://storymaps.arcgis.com/stories/3c8bc609e8dd4672a3122dbecd5f18f3>



MOVING FORWARD

- The Mountain Village community is in support of the Town's goal of zero waste.
- Staff is engaged with the local and regional community, municipalities, and funding organizations.
- We are seeing a significant increase in state and federal legislation around zero waste actions, including on the production side.
- In staff's opinion, it benefits us to be proactive in our efforts to achieve zero waste.



RESOURCES (PART 2)

[StoryMap: Recycling in Mountain Village](#)

[Mountain Village Planet Over Plastics](#)

[Mountain Village Composting Incentive Program](#)

[State of Recycling and Composting in Colorado \(2023\)](#)

[State of Recycling and Composting in Colorado \(2022\)](#)

