



2024 Campus Race to Zero Waste Case Study James Madison University

Campus Race to Zero Waste Dukes Level Up

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Focus of Case study:

Engaging key campus units and students in implementing targeted education and awareness efforts that advance source reduction, diversion, and participation

Detailed description of campaign or effort:

The *CR2ZW Dukes Level Up* program, consisting of eight targeted efforts, began in 2022 when James Madison University (JMU) marked its 16th consecutive year of participating in CR2ZW. This education and awareness effort leveraged existing organizational structures, programs, and student learning experiences to take a robust, long-standing program to the next level, illustrating that improving successful, well-established programs doesn't need to be resource intensive for a single office or expensive.

JMU's recycling efforts have been institutionalized for more than 35 years. Since a university-wide commitment to sustainability in 2008, JMU has implemented myriad waste-related continuous improvement measures such as establishing a composting program. However, we recognized challenges, including signage errors/loss, waning visibility, changing recycling markets/services, participant confusion over recycling changes, and participant emphasis on recycling v. reduction.

Responding to these challenges, we engaged campus units to create and implement targeted improvement efforts that are cost-effective and long-lasting (see table below). Campus partnerships for the program included the following units: Institute for Stewardship of the Natural World, Residence Life, Dining Services, Building Coordinators, Facilities Management (FM) Recycling/Waste Management, FM Work Control Center, and Athletics. To achieve a large cumulative effect, we capitalized on various existing student programs; 17 students

participated including seven Environment and Sustainability Residential Learning Community students, two capstone students, three dining interns, three ISNW student educators, and two graduate students.

Targeted effort	Primary audience	Partners	Type of activity			Learners	
			Communications	Events	Tools	Students in a Course	Student Employees
1. Recycling and trash bin sign audit and replacement in residence halls; messaging in residence halls; plastic #1 recycling pilot	Residence hall students	ISNW (lead), Office of Residence Life, FM Recycling/Waste Management	X		X	X	X
2. Recycling and trash bin sign audit and replacement in non-residential buildings; expanded plastic #1 recycling re-introduction	All campus users	ISNW (lead), Building Coordinators, FM Recycling/Waste Management	X		X	X	X
3. Website and deskside bin communication refresh		ISNW (lead), FM Recycling/Waste Management	X				
4. Painting of 'Spirit Rock'		ISNW (lead)	X				X
5. Dining reusable container loan and promotion	JMU Dining patrons	Dining Services (lead)	X		X		X
6. Dining sustainability activities and Instagram campaign		Dining Services (lead), ISNW	X	X			X
7. Building Coordinator Handbook addition of recycling and waste management information	Building Coordinators and building occupants	ISNW (lead), FM Work Control Center	X				
8. Athletics aluminum can bin placement and recycling pilot	Event attendees in larger center on campus	Athletics (lead), FM Recycling/Waste Management		X			

Planning steps:

-The ISNW, which coordinates the collaborative efforts of the university for environmental sustainability, identified challenges and met with stakeholders.

-ISNW staff leveraged cultivated partnerships with other units, meeting with and making recommendations to the units and determining how the ISNW could assist, if needed.

-The students became involved in different ways: they were hired as student educators or graduate students, they came to the ISNW with initiatives, or students/faculty approached the ISNW for student capstone/class projects. Students benefited from important skills gained by hands-on learning about peer education, digital and print communications, research design, and data analysis to name a few.

Timeline to implement:

This program spanned 2022-2024. Efforts 4 - 8 overlapped with CR2ZW 2024, while 1 - 3 were longer-term projects that could not be time-bound by CR2ZW dates. Efforts 1 and 2 culminated in presentations at end-of-academic year symposia/conferences (also around Earth Week).

1. Recycling and trash bin sign audit and replacement in residence halls; messaging in residence halls; plastic #1 recycling pilot

- Fall 2022: Initial plans and materials were developed. Plastic #1 recycling was piloted in a few areas.
- Spring 2023: An ISNW graduate student and JMU staff distributed recycling bags and accompanying posters with hall-specific recycling information in four residence halls. Discoveries made during this early phase of the project led to the initiation of many of the other efforts that made up the CR2ZW Dukes Level Up program.
- Spring 2023: Environment and Sustainability Residential Learning Community (RLC) students undertook a pilot project of replacing missing or incorrect signs in two residence halls and posting social norm campaign messages in two residence halls. (See Graphic 1a and 1b) The ISNW followed up with university signage in all residence hall recycling areas. (See Graphic 1c)

2. Recycling and trash bin sign audit and replacement in non-residential buildings; expanded plastic #1 recycling reintroduction

- AY 2023-2024: The ISNW Student Educators updated missing and incorrect signs in many non-residential buildings across campus to encourage proper recycling and reduce contamination. The sign update intentionally coincided with marketing of our plastic recycling locations. By limiting collection to plastic #1, which is most of the plastic on campus, in three public areas and three residence halls, we hoped to reduce contamination so that the material would be recycled. Work done by two Integrated Science and Technology (ISAT) capstone students at one residence hall and an academic building allowed JMU to quantify the effects of correct signage and feedback messaging. (See Photo 1)

3. Website and deskside bin communication refresh

- AY 2023-2024: ISNW and FM Recycling/Waste Management staff completed an update and redesign of the recycling website and the deskside bin signs. (See Graphic 2)

4. Painting of 'Spirit Rock'

- March 4, 2024 (during CR2ZW): ISNW student educators painted the JMU campus landmark, 'Spirit Rock' to promote sustainability with a specific focus on Sustainable Development Goal 12 – Responsible Production and Consumption, which has a large waste reduction focus. (See Photo 2)

5. Dining reusable container loan and promotion

- AY 2023-2024 (and during CR2ZW): Already-employed dining interns promoted the new, no-cost reusable clamshell container program, "Dukes Reuse," on Instagram, in dining halls, and in Potty Mouth – a monthly newsletter posted in bathroom stalls on campus. (See Graphic 3)

6. Dining sustainability activities and Instagram campaign

AY 2023-24: Already-employed dining interns educated patrons on reducing food waste and weighed leftover food in an all-you-can eat dining facilities multiple times, including each day for a week at one facility during CR2ZW. Also, on Instagram, the interns promoted the Weigh the Waste program and sustainable dining, composting, and waste reduction pledge activities.

7. Building Coordinator Handbook addition of recycling and waste management information

- February 2024 (During CR2ZW): The Handbook for Building Coordinators was updated with information on proper recycling and source reduction, and links were provided to the revised [Recycling/Waste Management website](#) and deskside bin guide.

8. Athletics aluminum can bin placement and recycling pilot

- February 15, 2024: Aluminum recycling bins were placed at the Atlantic Union Bank Center. JMU piloted aluminum recycling at a men's and women's basketball doubleheader.

Resources and stakeholders involved:

Our work was noteworthy in being very low budget, and there was no large burden for any of our partners. ISNW advocated to our partner units and actively supported most; some partners carried out efforts independently, while others the ISNW supported with posters, website content, and other communication materials. ISNW primarily worked to integrate within existing programs such as the Residential Learning Community, the Building Coordinator Training program, and academic student capstone project structures. In-kind contributions and resources were provided by our partners: Residence life, Dining Services, Building Coordinators, FM Recycling/Waste Management, FM Work Control Center, and Athletics. While the dining interns, student educators and graduate students were paid, RLC and capstone students received course credit.

Printing costs for new/corrected signage: (signage cost is low because the signs are simply standard office paper enclosed in an existing, mounted sleeve)

- \$30 for the RLC campaign
- \$205 for recycling posters in residence halls
- \$121 for recycling signs for campus and outreach posters for trash sorting rooms

Other costs:

- Approximately \$1000 for reusable recycling bags distributed to residence hall students
- Aluminum bins for Athletic stadium (amount not available)

Describe the Results of this campaign component:

The table below describes the general and specific results from each education and awareness effort. Additionally of note, during the pandemic JMU's diversion rate plummeted, but we recovered in 2024 to a rate that slightly exceeded that of 2018.

Targeted effort	a. General results	b. Specific measurable impact figures
1. Recycling and trash bin sign audit and replacement in residence halls; messaging in residence halls; plastic #1 recycling pilot	The Environment & Sustainability RLC students presented their CR2ZW work at the Sustainable Shenandoah Valley 2 nd Annual Student Sustainability Summit and the JMU Engaged Student Conference in 2023. (See Photo 3a and 3b)	After the bag distribution, sign corrections, and social norm messaging were complete, the RLC students' analysis found a noticeable increase in plastic recycling.
2. Recycling and trash bin sign audit and replacement in non-residential buildings; expanded plastic #1 recycling reintroduction	The ISNW student educators presented at the 3 rd Annual Student Sustainability Summit in Spring 2024.	<p>At the King Hall academic building where representative measurements were made, there was a decrease in the number of recyclables in the trash, and a similar trend was observed in Paul Jennings residence hall, where signs were replaced and measurements were made for comparison.</p> <p>An average of 160 lbs./month of plastic #1 was collected.</p>
3. Website and deskside bin communication refresh	--	--
4. Painting of 'Spirit Rock	JMU News online article, December 5, 2023: https://www.jmu.edu/news/cise/2023/12-5-geography-students-lead-way-in-sustainability.shtml	--
5. Dining reusable container loan and promotion	<p>Metrics from select posts from Instagram:</p> <p>Feb 19, 2024: promoting reusable container. 531 Likes.</p> <p>Jan 17, 2024: reminding about container program. 295 Likes. (See Graphic 4)</p> <p>Jan 11, 2024: announcing new container drop off locations. 325 Likes. (See Graphic 5)</p> <p>Nov 28, 2023: promoting reusable containers. 681 Likes. (This post featured JMU's high-profile Vice-President of Student Affairs, Dr. Tim Miller.)</p> <p>Sept 18, 2023: explaining how to use the JMU reusable container. 491 Likes.</p> <p>Sept 15, 2023: announcing 'Dukes Reuse' program. 504 Likes.</p>	--

Targeted effort	a. General results	b. Specific measurable impact figures
6. Dining sustainability activities and Instagram campaign	<p>JMU News online article about CR2ZW and Weigh the Waste, Feb 7, 2024: https://www.jmu.edu/news/stewardship/2024/2-7-jmu-enters-zero-waste-competition.shtml</p> <p>Metrics from select posts from Instagram campaign:</p> <p>Apr 27, 2024: recapping Earth Week. 340 Likes.</p> <p>Apr 25, 2024: announcing Virginia Green Travel Leader Award for the East Campus Dining Hall. 159 Likes.</p> <p>Apr 20, 2024: announcing Earth Week activities. 109 Likes.</p> <p>Mar 25, 2024: advertising 'Pick your Portion' program to reduce food waste. 248 Likes.</p> <p>Feb 12, 2024: educating about composting process. 204 Likes. (See Graphic 6)</p> <p>Jan 26, 2024: featuring the high-profile Vice-President of Student Affairs participating in the program. 474 Likes. (See Graphic 7)</p> <p>Jan 18, 2024: educating about reducing food waste. 146 Likes. (See Graphic 8)</p> <p>Nov 27, 2023: informing of food donation to Blue Ridge Area Food Bank. 257 Likes.</p> <p>Oct 17, 2023: announcing availability of low climate impact foods. 341 Likes.</p>	--
7. Building Coordinator Handbook addition of recycling and waste management information	There are more than 175 building coordinators on campus, all of whom coordinate regularly with those in their buildings.	--
8. Athletics aluminum can bin placement and recycling pilot	There was a permanent installation of aluminum collection bins in Atlantic Union Bank Center.	--

What would you do differently in the future?

Reducing contamination in recycling on campus continues to be a challenge, and we need to try more approaches to improve the situation. We hoped that with better signage, we'd see less contamination in the bins. We

hypothesize that contamination of plastic bins is due to failure to distinguish between the different types of plastics and/or wishcycling. For the residence hall cardboard bins that frequently contained full bags of trash, we surmised that students who really aren't interested in separating trash and recycling may be throwing their trash into the first available large open bins, which were intended for cardboard recycling. We recommended moving those bins to the back of the room.

What advice would you give to another college that wanted to do a similar effort?

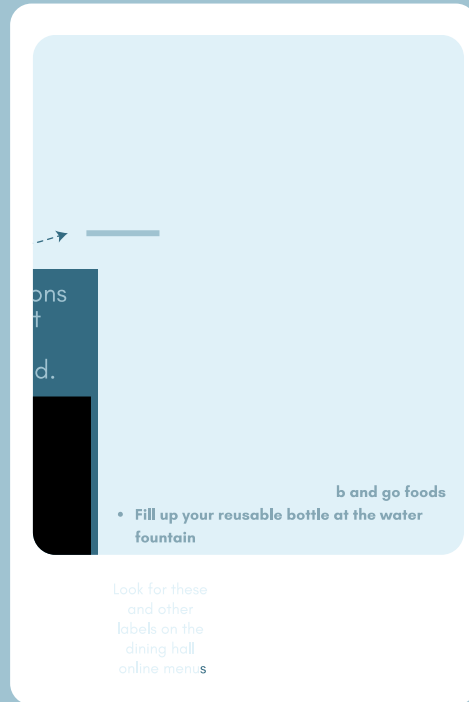
- Plan to meet with a variety of groups to understand confusion and/or misconceptions and define the challenges.
- List the areas that may be potential partners and look for opportunities to collaborate when reaching out.
- Brainstorm solutions with a variety of stakeholders; this may prevent unnecessary expense in pursuing solutions that have already been tried or have significant barriers.
- If appropriate, harness the power of student employees and students in courses in need of projects. Understand that student learning experiences take more time and effort, and frequent review/monitoring of the process will be necessary.
- Be ready to pivot to capitalize on an opportunity like agreeing to advise interested capstone students or responding to a need that appears, such as sign updating.

Photos and Graphics:

Project 1: Recycling and trash bin sign audit and replacement in residence halls; messaging in residence halls; plastic #1 recycling pilot.

Graphics 1a and 1b: Signs designed and posted by the Environment & Sustainability Residential Learning Community students and ISNW. Graphic 1c is a follow up poster by the ISNW.

1a.



Contact stewardship@jmu.edu

1b.

THERE'S A BAG ON YOUR DOOR. HERE'S WHAT IT'S FOR.



Use this bag to collect your recyclable items and carry them to the designated recycling area. **Recycling bins are located in the trash room.** *Please recycle only the accepted items and sort them into the correct bins.*

A message from the Office of Residence Life, Facilities Management, and the Institute for Stewardship of the Natural World



IN P.J.H., THERE ARE BINS FOR BATTERIES AND PLASTIC FILM, TOO!

PLEASE RECYCLE (BUT FIRST REDUCE, THEN REUSE)

1. Consider what you really need and what impacts these items have on the planet before buying stuff; reduce what you buy

2. Swap disposables such as bags, drink cups, take-out food containers, and utensils for reusable alternatives. Skip the straws and other unnecessary stuff

3. Recycle what's left, placing only the correct items in the bins. When you do this, these items really get recycled at JMU!

1c.

Thank You for recycling correctly!

JMU STUDENTS ARE MAKING A
DIFFERENCE FOR THE ENVIRONMENT
IN OTHER WAYS, TOO!



SCAN FOR
ENVIRONMENTAL
SUSTAINABILITY
COURSES



Project 2: Recycling and trash bin sign audit and replacement in non-residential buildings; expanded plastic #1 recycling reintroduction.

Photo 1: ISAT capstone students post posters and make measurements in late 2024.

Photo credit: ISNW staff.



Project 3. Website and deskside bin communication refresh.

Graphic 2: Updated deskside bin guidelines.

DEKSID RECYCLING BIN GUIDELINES

YES, ACCEPTED

PAPER
CATALOGS
MAGAZINES
INSERTS
ENVELOPES
STICKY NOTES
PAPERBOARD CARTONS
CORRUGATED CARDBOARD BOXES (FLATTENED)
ALUMINUM CANS (EMPTY)
BATTERIES
INK AND TONER CARTRIDGES
ADAPTERS, CHARGERS, CABLES, ETC.
PLASTIC FILM (CLEAN, DRY, EMPTY):
LDPE / HDPE FILMS, NEWSPAPER SLEEVES, BREAD BAGS,
PRODUCT WRAP, CEREAL LINERS, FOOD STORAGE BAGS,
PRODUCE BAGS, DRY CLEANING BAGS, GROCERY BAGS,
CASE WRAP, AND PACKAGING AIR PILLOWS.


NO

PLASTIC BOTTLES
PLASTIC CONTAINERS
GLASS
LIQUID
FOOD
WET PAPER
PAPER TOWELS
NAPKINS/TSSUES

ATTACH THIS TO YOUR DESKSIDE BIN!

Please contact rexrodjp@jmu.edu for special services, locked bins/shredding for confidential paper. Scan the QR code for the Recycling/Waste Management website.





Project 4: Painting of ‘Spirit Rock’.

Photo 2: ISNW student educators promote sustainability. Photo credit: ISNW staff.

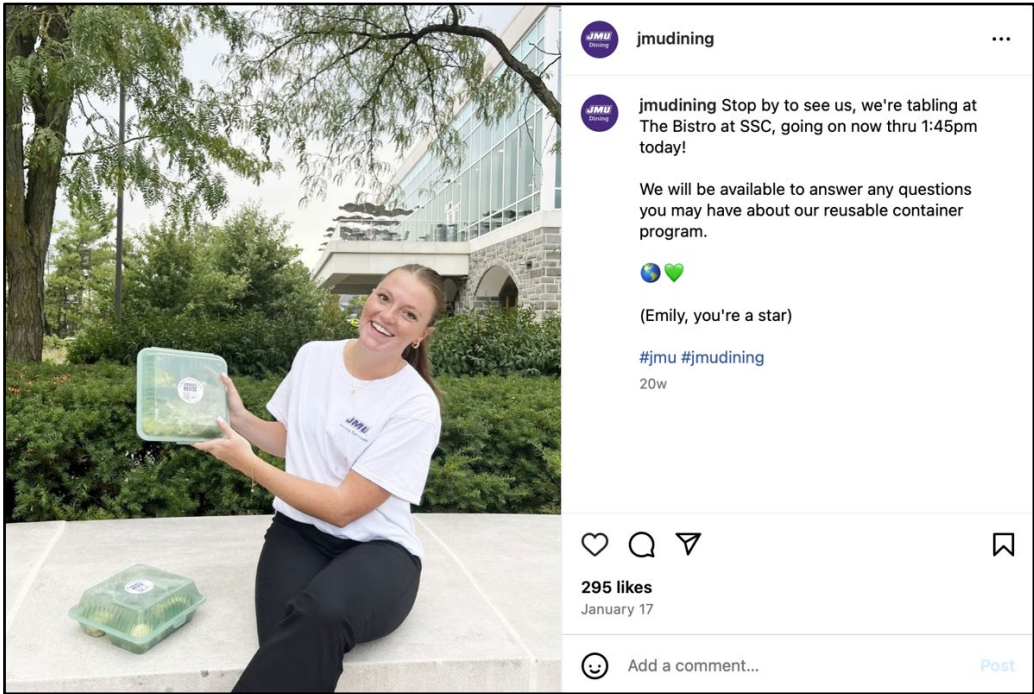


Project 5: Dining reusable container loan and promotion.

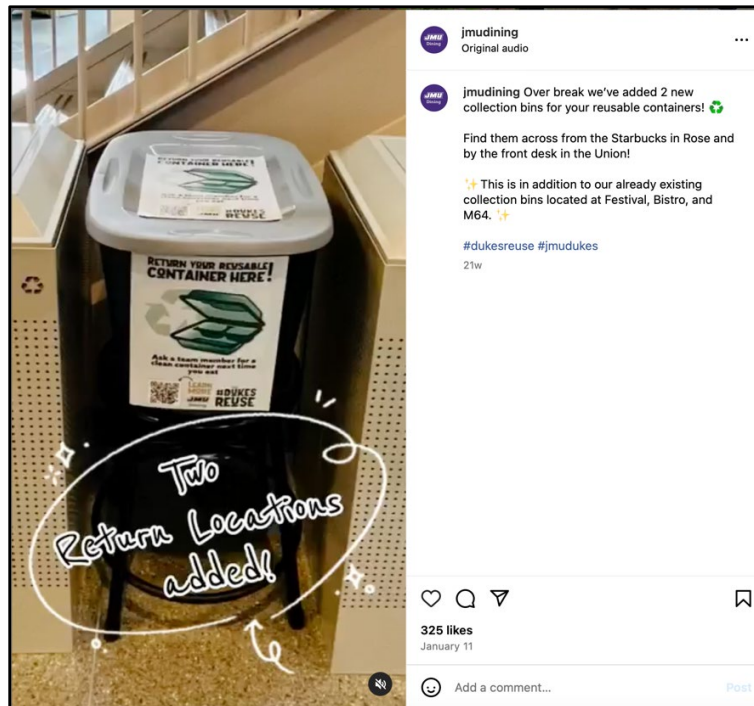
Graphic 3: Dining Services’ reusable container logo and messaging.



Graphic 4: Dining Services’ Jan 17, 2024 post reminding people about container program (295 Likes).

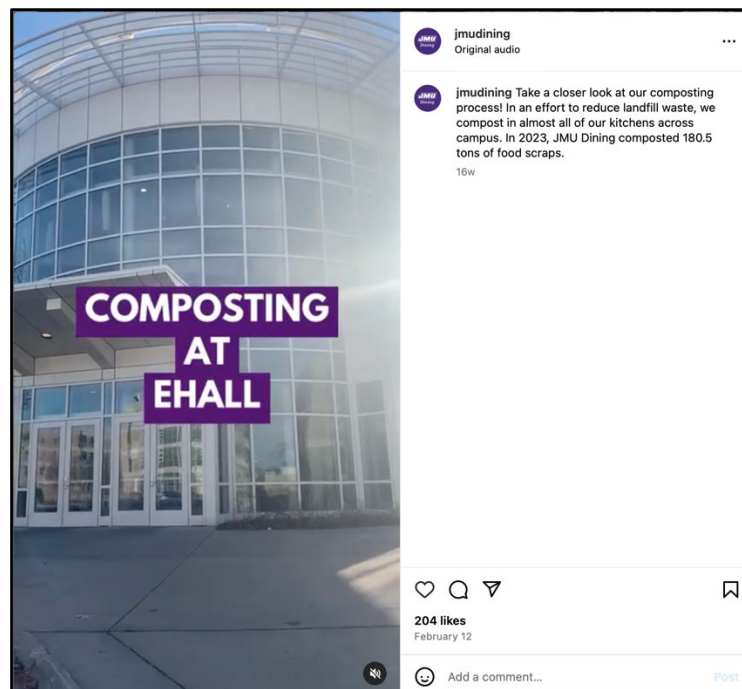


Graphic 5: Dining Service's Jan 11, 2024 post announcing new container drop off locations (325 Likes).



Project 6: Dining sustainability activities and Instagram campaign.

Graphic 6: Dining Services' Feb 12, 2024 post about the composting process (204 Likes).



Graphic 7: Dining Services' Jan 26, 2024 post featuring Vice-President of Student Affairs, Dr. Tim Miller, participating in the Weigh the Waste program (474 Likes).



Graphic 6: Dining Services' Jan 18, 2024 post to reduce food waste (146 Likes).



Project 1. Recycling and trash bin sign audit and replacement; messaging in residence halls; plastic #1 recycling pilot.

Photos 3a and 3b: Environment & Sustainability Residential Learning Community students presenting their CR2ZW work at the Sustainable Shenandoah Valley 2nd Annual Student Sustainability Summit and at the JMU Engaged Student Conference in 2023. Photo credits: ISNW staff.

