

## Executive Summary

The partnership between USC Upstate and Waste Wise Innovation launched a strategic recycling pilot from November 7 through December 31, 2025, demonstrating measurable environmental and operational wins during the soft-launch phase. Over 46 days, five strategically placed collection units captured 602 containers (497 plastic bottles and 105 aluminum cans) with zero contamination, a remarkable achievement that validates the program design, student engagement, and clear signage strategy.

This soft-launch phase established a strong foundation for scale-up in 2026, with early results showing consistent participation, meaningful environmental impact, and a replicable model for campus-wide expansion.

## Soft-Launch Initial Impact | Key Performance Indicators



**602**

Total containers recycled



**497**

Plastic bottles



**105**

Aluminum cans



**29.40**

Pounds of material (plastic and aluminum) diverted from landfill

## The Partnership Win

Waste Wise Innovation and USC Upstate collaborated to design and deploy a pilot recycling program that prioritized simplicity, visibility, and student accessibility. By focusing on two high-volume materials (PET #1 plastic bottles and aluminum cans) and installing Topper Stopper™ units on recycling bins at five strategic campus locations, the partnership achieved:

- Zero contamination rate across all collections.
- Consistent daily participation averaging 13.6 items per active day.
- Strong performance at high-traffic locations, with the Gymnasium capturing 43.6% of all items.
- Measurable environmental benefits: 1,480 gallons of water saved, 102 lbs of CO<sub>2</sub> reduced, and 350 kWh of electricity conserved.
- Material recovery value of \$26.32 (total), demonstrating circular economy potential.

## Environmental Impact: Real-World Wins

The 602 containers collected during the soft-launch represent more than just recycling numbers, they translate into tangible environmental benefits that support USC Upstate's sustainability mission and demonstrate the value of the Waste Wise Innovation partnership.



Topper Stopper™ Units Installed on existing recycling bins.

## Environmental Impact Snapshot



### 1,480 Gallons | Water Saved

≈ 94 showers or 37 loads of laundry

Every gallon represents water not consumed in manufacturing because materials were kept in the circular economy instead of being lost to landfill disposal. By recycling, the partnership avoids the water-intensive extraction and refining processes required to create aluminum and plastic from virgin resources.



### 350 kWh | Electricity Conserved

≈ 290 days of laptop use

Every kilowatt-hour represents energy not consumed in production because diverted materials were used as feedstock for new products. Recycling aluminum and plastic requires significantly less energy than mining raw ore or extracting petroleum, ensuring that energy is used to sustain the circular economy rather than fuel new resource extraction.



### 102 lbs CO<sub>2</sub> | Emissions Reduced

≈ 116 miles of driving in a standard gasoline-powered car

Every pound of CO<sub>2</sub> represents emissions not released into the atmosphere because materials were diverted from landfill and back into productive use. This reduction is achieved by avoiding the carbon-intensive manufacturing of virgin materials and by preventing the methane generation that occurs when waste decomposes in a landfill environment.

## CASE STUDY

### Location Performance Insights

The five Topper Stopper™ units were strategically placed to maximize visibility and convenience. Performance data from the pilot reveals clear patterns that will inform 2026 expansion:

Gymnasium: 264 items (43.6%)

The top-performing location, benefiting from high foot traffic, proximity to vending machines, and consistent student activity. This validates the importance of placing units near athletic and recreational spaces.

Other locations showed moderate but consistent participation, suggesting that with increased awareness campaigns and additional signage, performance can be optimized across all sites.

## Lessons Learned & 2026 Outlook

The soft-launch phase provided valuable insights that will shape the expanded program in 2026:

- High-traffic locations drive participation: The Gymnasium's performance demonstrates the value of placing units where students naturally congregate.
- Branding and simplicity matter: Spartan Green branding and clear two-material focus resulted in zero contamination and strong engagement.
- Consistent servicing builds trust: Regular collection and visible maintenance reinforced that the program is active and valued.
- Peak days reveal opportunity: The Nov 7 peak (64 items) suggests that targeted campaigns around events or high-activity periods can boost participation.
- Material value supports sustainability: Recovering \$26.32 in material value demonstrates circular economy potential and offsets program costs.

## Conclusion

The 46-day soft-launch pilot between USC Upstate and Waste Wise Innovation achieved meaningful wins: 602 containers recycled with zero contamination, measurable environmental impact, and strong performance at strategic locations. These results validate the program design and establish a foundation for confident scale-up in 2026. With tempered expectations and a focus on continuous improvement, the partnership is poised to advance USC Upstate's sustainability mission and build a lasting culture of environmental responsibility across campus.

### Methodology & Impact Notes

#### Data Standards

Calculations are based on the EPA Waste Reduction Model (WARM) and industry lifecycle assessments. Metrics represent the net environmental "win" of using recycled feedstock versus extracting virgin raw materials.

#### Conversion Benchmarks

- **Water:** Based on a standard 8-minute shower using a 2.5 GPM low-flow showerhead (20 gallons per shower) or a front-load washing machine (40 gallons per load). Savings are derived from avoided water-intensive mining and petroleum refining.
- **Energy:** Based on average laptop power consumption (1.2 kWh/day). Aluminum recycling alone saves 95% of the energy required for primary production.
- **CO<sub>2</sub> Emissions:** Based on the EPA average for a passenger vehicle (0.89 lbs CO<sub>2</sub>/mile). Includes avoided production emissions and prevented landfill methane.
- **Material Value:** Based on regional Q4 2025 scrap commodity pricing for PET (\$0.95/lb) and Aluminum (\$0.50/lb).

#### Audit Verification

All item counts, weights, and contamination rates were verified through a physical audit of the 5 recycling bins fitted with Topper Stopper™ units during the 46-day pilot soft-launch period.