

Lawrence Family Development Charter School Case Study: Wasted Food Reduction

Founded in 1995, Lawrence Family Development Charter School (LFDCS) consists of three academic buildings divided by grade level in the center of Lawrence, Massachusetts. LFDCS enrolls 800 pre-K-8th grade students and employs 58 staff members and 9 administrators. The school is dedicated to fostering a learning environment that focuses on empowerment, inclusion, social-emotional growth, and 21st Century skills. Lawrence, Massachusetts is a city of industry with a deep-rooted history in the textile mills of the mid-1800s. Lawrence is home to approximately 88,100 residents, including over 13,000 students from pre-kindergarten through twelfth grade. Approximately 43% of Lawrence residents were born outside of the United States, over 77% speak Spanish and/or Spanish Creole in addition to English, and more than 82% identify as Hispanic and/or multiracial.



Food Waste Reduction Initiative

The first step in implementing a successful waste reduction program at Lawrence Family Development Charter School was creating an organized system with clear communication and commitment from all stakeholders. The Recycling Coordinator for the City of Lawrence, Rosanna Delrosario, informed the LFDCS team that the MassDEP's Green Team could provide free equipment and technical assistance to reduce and divert waste in the school. Administrators, custodial staff, facilities managers, dining services staff, the school dietician, teachers, caregivers, the superintendent, and board members were included in the conversation to start a new program for food waste diversion and expanded recycling on campus. By focusing on financial benefits and alleviating concerns about cost and pest-control, the team was able to get all stakeholders to agree to move forward. With cross-campus buy-in, the program focused on data-driven best practices and constant improvements to limit contamination and increase waste diversion.

Currently, all meals are prepared from scratch in each of the three buildings by Lawrence Family Development Charter School dining services staff. Food waste diversion at LFDCS began in May 2023 as a pilot program in the 3rd-4th grade building. The pilot ran for two months and 95% of cafeteria waste was diverted from the waste stream during this time. Before this pilot, the school did not have a food waste diversion program in place and was recycling only cardboard. The cafeteria sorting station consists of one liquid pour off bin, one recycling bin, one trash bin, one food waste bin, and a desk to stack empty compostable trays. For the first three weeks, student use of the sorting station was heavily monitored by staff members with training and adjusted job descriptions to meet the new needs of the cafeteria. Students quickly learned the correct bin for each material on their tray and they soon required little oversight to sort properly. The pilot also included expansion of food waste collection to third and fourth grade classrooms during the breakfast in the classroom program each morning.



"It would not have been possible to move forward if not for the whole team being committed and excited."

- Justin Hodgkins, Nutritional Services Director

Mr. Hagiya and his team saw a substantial reduction in bag volume when they separated the compostable trays from barrels and placed them in a nested stack. This reduced the number of bags, which reduced the need for space in the dumpster, and reduced the total number of trips from the cafeteria to the dumpsters for custodial staff. LFDCS reviewed current contracts with waste haulers and reduced their pickup frequency, which reduced overall hauling costs each month. They then started a new contract with an organics hauler. Since right-sizing, the school hauling costs are lower than before, even with the added organics hauling services.



By observing the dumpster capacity through visual audits, the LFDCS team noticed that their trash and recycling dumpsters were not full when picked up by their hauler. The tipping fee was the same regardless of whether the dumpsters were full, so the team “right sized” their dumpster pick-up schedule to better meet their needs and reduce hauling costs. Masa Hagiya, the Program Finance and Procurement Officer, registered for the Green Team in August 2023 seeking signage resources and contact information for food waste haulers in the area. In January 2024, Mr. Hagiya coordinated with custodial staff and evaluated facility needs to submit a

Green Team equipment request for 20 set out bins, 200 recycling baskets, 25 wheeled carts, compost bins and a worm voucher. Food waste sorting stations and single stream recycling are now implemented in all three school buildings.

for 20 set out bins, 200 recycling baskets, 25 wheeled carts, compost bins and a worm voucher. Food waste sorting stations and single stream recycling are now implemented in all three school buildings. A weigh station was placed in the kitchen for dining services staff and custodial staff to weigh each material stream before bringing them to the dumpsters. Weights were diligently recorded multiple times a day on tablets with shared spreadsheets created and monitored by Mr. Hagiya. This method produced weekly, monthly, and annual performance reports that were shared frequently throughout the team.

Everyone on the team had access to the shared spreadsheets to ensure the most up-to-date data was maintained daily. Plate waste weight monitoring allowed them to see trends in preferences and adjust menu ordering and preparation techniques. Whole fruits and wrapped surplus food are placed on a share table that is available to all students interested in eating additional servings.



Food Waste Reduction Initiative

Administrators ensured there was a mechanism for concerns to be heard before, during, and after new task implementation. Anyone whose job description was changed was given many opportunities to provide feedback and participate in the process to be sure their voice was heard. This increased participation and a strong sense of ownership across the program. Teachers incorporate waste reduction lesson plans in classroom curricula. This allowed the students to know the “what” and the “why” behind new waste reduction and diversion initiatives. Internal social media posts were shared on campus celebrating success and waste reduction initiatives to motivate students across all grade levels. This built trust and momentum for the program throughout the school. Additionally, the school registered dietician and dining services team started Taste Test Tuesdays where students tried new foods and gave instant feedback for their meal preferences. The team was able to adjust menu planning which increased students’ satisfaction and consumption while maintaining nutritional standards and reducing plate waste. School administrators also coordinate with the Wellness Committee and provide updates at monthly parent coffee meetings to encourage best practices for waste reduction and diversion at home, as well.



“The program is creating a great impact financially, ethically, and environmentally.”

- Masa Hagiya



STEM (Science, Technology, Engineering, and Mathematics) Program Composting, From the perspective of LFDCS STEM Coordinator, George Masterson:

“The process starts with our compost bins which we fill with grass clippings, leaves and compostable food products. The composting process is accelerated by red wiggler worms which we got through The Green Team. Once the compost has turned to a rich hummus, we used it in our school vegetable gardens. We also use the compost to promote the growth of 12 newly planted trees, which were granted to us by Ground Works Lawrence. In the classroom, we explored an entire unit on decomposition of organic matter. This included soil analysis, maintaining the correct variables for a healthy compost pile and waste mitigation strategies for both domestic and industrial environments. Lastly, [the students created an] informative PowerPoint which helped our students understand the food collection and composting procedure and the purpose behind it. I can’t thank [the Green Team] enough for being a major component in the smooth roll-out of our Zero Waste Program.”

At A Glance

- The Lawrence Family Development Charter School enrolls 800 pre-K-8th grade students, 58 staff members, and 9 administrators. Multilingual abilities are celebrated at LFDCS and students who are English-Language Learners receive additional support throughout the school year. Signage includes clear pictures with examples of material that belongs in each bin.
- Since September 2023, Lawrence Family Development Charter School has diverted 23 tons of food waste from the waste stream to anaerobic digestion.
- The administrator-led initiative has created a solid plan with precise systems to ensure the best possible outcomes for source separation and waste diversion on campus.
- Cost savings: Total hauling costs were less after right sizing, even with added recycling and anaerobic digestion services.



THE GREEN TEAM is an environmental club for Massachusetts students, grades kindergarten through twelve, presented by the Commonwealth of Massachusetts Department of Environmental Protection. It is an interactive educational program that empowers students and teachers to help the environment through waste reduction, reuse, recycling, composting, energy conservation and pollution prevention.

If your class, school, or district is interested in joining THE GREEN TEAM, please submit a GREEN TEAM registration by fax, mail, or online. If you have further questions, please visit the [GREEN TEAM website](#) or [reach out via email](#).



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