

# Water & Resource Recovery Facility Muscatine, IA Muscatine Organics Recycling Center (MORC)

NEEA26 RESEARCH & TECHNOLOGY



National Environmental  
Achievement  
AWARDS



**MORC**  
MUSCATINE ORGANICS  
RECYCLING CENTER

Food Waste  Energy

MORC...Its Out Of This World!

Inside the T42 Turbo Separator, food depackaging happens by rotating paddles that opens the package and releases the organic content. The food then falls through the bottom while the packaging is removed from the end. Food waste is then moved by tanker to the WRRF for addition to the anaerobic digesters.





## **Muscatine Organics Recycling Center: A Pioneer in Food Waste Recycling**

The Muscatine Organics Recycling Center (MORC) is a groundbreaking facility that has revolutionized food waste management in the United States. As one of only three municipally owned facilities of its kind, MORC has established Muscatine, Iowa, as a regional hub for organics recycling operated by the City's Water Resource Recovery Facility.

### **Innovative Technology and Process**

MORC's unique ability to separate food waste from packaging materials has transformed the way organic waste is processed. The facility uses a T-42 Turbo Separator to strip packaging from organic waste, which is then blended and fed into anaerobic digesters to produce biogas. This allows the processing of packaged foods that would otherwise be landfilled because the labor costs to separate the food from its packaging are cost prohibitive.

### **Impact and Benefits**

Since its opening in 2020, MORC has diverted over 24,000 tons of waste from landfills, processing 30-40 tons of organic waste five days a week. The facility serves local residents, grocery stores, and food manufacturers, including major companies like Kraft/Heinz and Nestle Purina. By providing a cost-effective and environmentally friendly solution, MORC has tripled organic waste collection for local grocery stores while reducing their trash expenses.

### **Economic and Environmental Advantages**

The facility is funded by tipping fees and is expected to be self-sustaining by 2030 through the sale of biogas. The city's long-term vision includes producing renewable electricity within a microgrid to supply heat and power for the Water Resource Recovery Facility, further reducing reliance on non-renewable energy sources.

### **A Model for Sustainability**

MORC's success has garnered national attention, with visitors from cities like Minneapolis and Dallas seeking to replicate its model. The facility's innovative approach and commitment to efficient processing have made it a testament to the city's visionary leadership and dedication to environmental sustainability. As a result, Muscatine has become a leader in organics recycling, paving the way for other communities to follow suit.

By providing a viable alternative to landfilling organic waste, MORC is changing attitudes and practices in the water industry. Its impact extends beyond environmental benefits, supporting local businesses and contributing to a more sustainable future.