



Households received a 90-gallon cart (left) for yard trimmings, pre and postconsumer food residuals and soiled and nonrecyclable paper. Trash and recyclables are set out at the same time.

REACHING ALL RESIDENCES

EXPANDING A FOOD RESIDUALS COLLECTION AND COMPOSTING PROGRAM

SINCE start-up six years ago, the food residuals collection program launched by Hutchinson, Minnesota has gone through three major phases. Initially, the city's Resource Recovery Department focused on the commercial/industrial sector, then reached out to institutions, and now is covering all residences. Along the way, Hutchinson has fine-tuned its collection and composting processes.

The city (pop. 12,000) is located in a rural area of Minnesota, with a mixture of agriculture and light industry. Hutchinson has operated a residential yard trimmings dropoff site since 1984, collected recyclables curbside since 1990 and has a strong backyard composting program. Biosolids from the city's wastewater treatment facility were composted from 1995 to 1996.

In May, 1997, Hutchinson received a two-year \$100,000 Sustainable Communities grant from the Minnesota Office of Environmental Assistance. That summer, the city contracted with a hauler, Aagard West, to begin collecting organics from two grocery stores and the cafeterias of its two largest industries — Hutchinson Technology and 3M — that have 2,000 employees each.

The grocery stores participated for two years. "They opted out after the grant funding ended and we asked them to pay the costs

Hutchinson, Minnesota opens a new \$3.4 million facility to process organics from all households and other generators.

Molly Farrell

of collection," says Lawrence Winter, Hutchinson's resource recovery coordinator. "We intend to recontact them now that we have a new facility and a better handle on costs." The two cafeterias participated for two years as well. "There wasn't that much organic waste," notes Winter. "The food service people were interested but it would take another sort so it wasn't worth the bother for the industries to set it up."

Handling institutional organics was a learning experience. "We found that you need a cheerleader in the organization," he says. "If management has bought into the program, they can convince the employees to participate. Getting waste separated at the source is much easier to do than separating it afterwards."

"We also tried not to force people to reinvent how they handled waste," he adds. At the same time, the city offered suggestions. In one grocery store, employees were putting produce trimmings into a container and carrying it out to the back room to the dump chute. The employees were complaining

Trash and compostables are cocollected in a split truck. Trash is unloaded into a walking floor trailer (right). Food, yard trimmings and soiled paper are emptied onto the tipping floor (far right).



about back pain, so the city bought the store a rolling cart that didn't need to be lifted.

In the winter, juicy, wet produce froze in the containers, even when the grocery stores used liners provided by the city. "The liners leaked, so we told the produce manager to put a cardboard box at the bottom of the container," recalls Winter. "The box froze to the bottom and absorbed the liquids, so the produce came out and the liquids stayed."

COLLECTING FROM INSTITUTIONS

In September, 1997, the city began collecting pre and postconsumer food scraps from the 2,025 students in Hutchinson's two elementary schools (grades K-1 and 2-5) middle school and high school. The elementary school with grades K-1 has 100 percent participation and less than two percent contamination. "The little kids do what they are told and rarely make mistakes," explains Winter. At the other elementary school, there is less than five percent contamination. Both schools generate significant amounts of food residuals. "The federal government requires elementary schools to serve certain portions of foods, so there is lots of waste because kids don't always want to eat them."

In the middle school (grades 6-8) and high school (grades 9-12), contamination soars and participation drops. "We start running into problems because the students have more food options including cold sandwiches, potato chips and pop," continues Winter. "In the high school, students can buy what they want, so there's very little food waste, but there's high contamination from chip bags and pop cans."

In spite of these problems, the city has decided to continue collecting food residuals in the middle and high schools. "When fifth and sixth graders move up, the food collection program will be in place, and when they're out of school and in their own homes, they'll be used to separating food waste," he says. "It's part of the whole education process."

Hutchinson collected food residuals from a hospital and nursing home until April, 2001. "They stopped because we couldn't use all of the cardboard they generated, and their hauler didn't want to deal with separating out the cardboard," says Winter. "Once this issue is resolved, they will come back on board."

RESIDENTIAL COLLECTIONS

Hutchinson started a pilot program in spring 1998 to collect food residuals from 225 residences in one section of the city. In April, 2001, residential collection was expanded citywide to all 3,500 households. During the pilot, the city collected data and made some interesting findings.

One percent of the selected households opted not to participate in the pilot, mainly because they lived elsewhere during the winter. Each participating household received a 90-gallon refuse cart for their yard trimmings, pre and postconsumer food



After passing through a picking line to remove contaminants, materials are conveyed into a large mixer, along with water, wood chips, soiled paper, pasteboard and cardboard.

residuals, and soiled and nonrecyclable paper. "Detractors were saying that there was already enough recycling and no one would do another sort," notes Winter. However, participation during the pilot averaged 70 to 75 percent, much higher than Hutchinson's average curbside recycling participation rate of 40 to 50 percent.

Households received eight 20-gallon BioCorp compost bags for their 90-gallon containers during the pilot. The city tested eight biodegradable bags before selecting BioCorp. "We went beyond the standard institutional tests and had people actually try them," notes Winter. "From a composting standpoint they compost the best. They leak, but they're pretty tough and don't break down in the box before we can distribute them."

Trash, recycling and organics collections are done under contract with Waste Management. The city pays to have the organics brought to its processing facility. Trash is brought to the Spruce Ridge Landfill, which Waste Management owns, and the city pays the tip fee costs. Residential organics are collected once a week, on the same day as recyclables and trash. Food residuals are collected twice a week from the schools by the school district's contracted hauler, Witte Sanitation.

"We prepared residents citywide the same way we did for the pilot," says Winter. "We sent a letter in their utility bills a month before we were ready to start, and then a flyer." Waste Management began delivering 90-gallon carts to all Hutchinson residences April 1. On the day of delivery, the households also received a two-month supply of bags (enough for two bags a week) and an informational booklet. Citywide collection began the second week of April.



Hutchinson residents generate 2,700 to 2,800 tons/year of trash, recyclables and organics. During April, approximately 10 tons/week of organics were collected. That amount is expected to rise as the program progresses.

City workers have been educating residents about trying different methods of storing their food scraps. "They can use regular plastic bags to hold the organics until they are ready to dump them into the 90-gallon container," says Winter.

Haulers bidding on the city contract in January, 2001 had to provide a method of tracking when organics carts are put out by residents because the city plans to offer a participation credit to regular participants. During the residential pilot, the driver of the collection vehicle carried a route sheet and checked off houses that had put out carts. Under Waste Management's new system, radio devices are attached to the 90-

gallon carts. A hydraulic lift arm on the truck is equipped with a scanner that can "read" which carts have been left by the curb. The information is received by an on-board computer. A different bar code scanning system is used to record when residents put their recycling bins by the curb. Residents separate glass, newsprint, metals and plastics for recycling.

NEW ORGANICS PROCESSING FACILITY

The city started construction of a new \$3.4 million processing facility last fall. The Creekside Organic Material Processing Facility is located one mile east of Hutchinson. To fund it, the city received \$1.34 million from the Minnesota CAP program, \$1.13 million from McLeod County and \$900,000 from the city of Hutchinson, which will own and operate it. The 26-acre site consists of a tip transfer building, finished compost bagging building, an in-vessel composting pad, a one-acre mixed organics compost curing pad, and a ten-acre compost pad for yard trimmings.

Waste Management is currently running three trucks to separately collect trash, recyclables and organics. It is outfitting a new split compartment truck to collect organics and trash. "Once the split truck is outfitted and on the street, it will run out to our facility which has the capacity of direct transfer," says Winter. "Our facility is the only one permitted in the state to do direct transfer."

The facility is permitted for 14 tons/day of source separated organics; 28 tons/day of yard trimmings; and 30 tons/day of MSW transfer materials. Most residential customers pay \$11.87/month with credits for participation. If a customer selects every other week pick-up of the reuse fraction, the

rate is less than \$9/month. This amount is less than two-thirds of the \$28/month that Hutchinson residents paid in 1992 for refuse collection.

In the new facility, the split compartment truck dumps trash onto a walking floor semitruck that gets hauled to the landfill. The organics are dumped onto the tipping floor, so Waste Management doesn't have to make a landfill run with only half a truckload of trash. "They'll probably only have to do a landfill run twice a week instead of the twice-a-day runs they're doing now," says Winter, adding that the facility began operating in mid-May. "We're trying to figure out every way to make it economically feasible."

An indoor direct feed conveyor system loads the mixed organics into containers, which then are hauled outside and connected to a computer-controlled aeration system.



A skid steer operator spreads the organics and visually inspects them for contaminants that are harmful, hazardous or could damage equipment. "In the past, we've found a 20-pound stone, garden hoses, a radiator and part of an engine block," notes Winter. The organics are pushed onto an in-floor conveyor and travel up to a pick line where employees take a closer look at the materials. The materials are then loaded into a large mixer with a 20 to 25 yard capacity. Water and wood chips (for porosity) are added, as well as soiled papers, pasteboard and cardboard.

During the pilot program, food residuals, yard trimmings and soiled paper were com-

posted in four in-vessel containers manufactured by NaturTech Composting Systems, Inc. The city recently purchased 16 Green Mountain Technologies 40-yard containers and installed them in May. "There were issues with being supplied with additional NaturTech Systems in a timely manner," notes Winter.

Once the organics are mixed, they are loaded into the containers through an indoor direct feed conveyor system. The containers are hauled outdoors with a standard rolloff truck, placed on a specially designed pad, and connected to computer-controlled air flow and temperature probe systems. Planned retention time in the containers is 21 days at a temperature of 120° to 150°F. The organics will then be unloaded onto another concrete pad and formed into windrows. The windrows will be turned weekly or biweekly for four to six months. The finished compost will be screened with a recently purchased Bivi-tec screener. Contaminants and wood chips will be screened out and the wood chips reused in other compost cycles.

BAGGING COMPOST

In past years, the compost has been sold in bulk and bags to local residents and landscapers and used in city parks. Until recently, the city was manually producing 1,000 to 1,500 bags for local distribution. It recently purchased a fully automated Premier Tech bagger capable of producing 20 to 25 bags of compost/minute. The bagging system has an automatic pelletizer and stretch wrapper.

Hutchinson currently has a stockpile of 10,000 to 15,000 yards of finished compost. Winter predicts that the city will bag 200,000 to 400,000 bags/year and sell the rest in bulk. "We missed the threshold for bagging for the 2001 season because flooding made the stockpile unavailable," he notes. As of May, water still surrounded the stockpile.

The city is under contract with Great River, an Iowa marketing consortium, to market all of its compost. "We're working on a trademark for our own product so we can private-label it," says Winter. Plans are to sell two lines of compost — mixed organics and yard trimmings. ■