

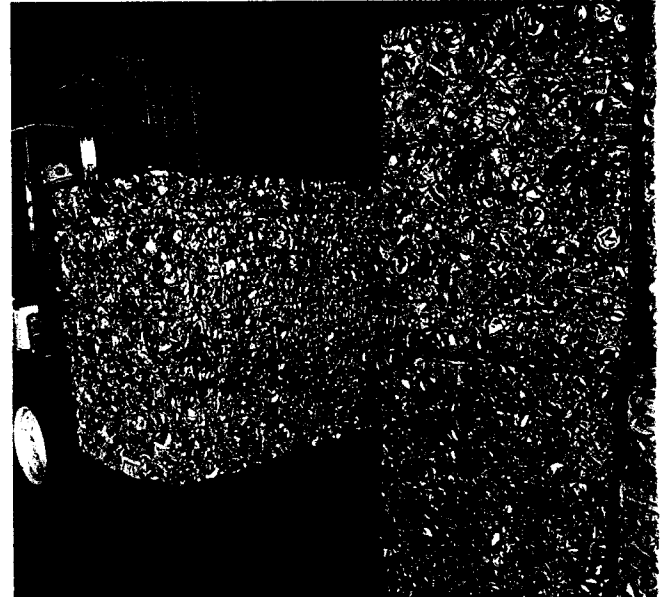
processing recyclables:

Why SAN JOSE GOES THE EXTRA YARD

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*Markets pay a premium for high-quality commodities.
To get to that quality, you've got to process source-separated material.*



Aluminum cans on their way to the baler.



Processing the material into desirable forms is the key to a higher price.

With the three plastic containers used to collect household recyclables at some of San Jose's curbs, one might think the city should not need a materials processing center. With the residents' separation of cans, bottles, and newspaper in the three bins, and segregated loading into route trucks, the material should be *relatively* uncontaminated.

How, then, does San Jose explain the one-year-old, \$500,000 (equipment cost) processing facility that

By JOE SALIMANDO

Waste Management, Inc., operates through its local subsidiary, Recycle America? Well, the word "relatively" is not as insignificant as it might seem.

Explains Stu Clark of Recycle America: "Even with segregated collection, you still have to prepare the material to satisfy your customers—the glass buyers, the metals markets, the newsprint purchasers here and overseas."

Adds Richard Gertman, the city's recycling programs manager, "By processing the material into the form the buyers want, we are able to get a higher price. That will be a key to making the program a success."

As explained in the January, 1986, *Waste Age* cover story (written about a company since acquired by Waste Management), the city has a strong interest in seeing the recycling program turn a profit. San Jose and its contractor have a market-risk-sharing plan which entails splitting any deficit or surplus in projected salvage revenue.

Only one scale needed

A computerized scale system, conveyors, a baler, some magnets, and gravity are the important components of the San Jose facility.

The leased 25,000-square-foot building presents some obstacles that designers have overcome. Included in the problems: a series of posts; the building does not allow



Newspaper is San Jose's volume leader.

for drive-through by the trucks; the facility is not as long as designers would have liked.

Trucks used in the collection effort are fabricated by Daniels Steel of Ukiah, Calif., and mounted on International chassis. The trucks each have hoppers of four, four, and nine cubic yards.

After achieving a full load, trucks drive to the facility and stop at a long scale which positions the trucks right next to two hoppers. The Fairbanks scale system is integrated with a computer so that all materials weighing is accomplished in the time it takes the truck to empty cans and bottles.

At the first hopper, the three-bin truck dumps its

glass; at the second, its cans. Because the computer fed by the scale has the unloaded weight of the truck and driver in its memory, the continuous weighing as the truck unloads feeds the computer all of the information it needs for an instant assessment of the tonnages of glass, cans, and paper picked up on that route.

What happens to the glass

Glass bottle breakage starts as they fall from the truck bins into the hopper. From here they are taken by conveyors; a picker hand-sorts any contaminants from the glass.

The conveyor (all of the facility's conveyors are from Recycling Equipment Manufacturing of Spokane, Wash.) takes the colored bottles to a 30-yard roll-off box. Note that the conveyor's height at the point where the



Conveyors, baler, gravity: Important facility components.

bottles drop is about 14 feet above the surface.

"The glass that comes in here at 300 pounds per cubic yard, leaves at 1,000 pounds per yard," says Dale A. Newton, operations manager for Waste Management of Santa Clara County. "The compaction is the result of breakage from dropping the glass from that height and is accomplished without the use of a crusher."

Glass is sold to Circle Glass, which pays \$25/ton.

Limited problems

Cans have presented some fascinating problems.

The citizens of San Jose have become so enthusiastic about recycling that they are putting much more than bev-

erage cans in the can bins. Gertman says big and small soup and vegetable cans are put out with the recyclables.

City and Recycle America officials encourage this. As the metal cans are drawn through a series of magnets, aluminum goes one way and ferrous metal goes another -but sometimes small aluminum beverage cans caught inside larger non-aluminum soup cans go the wrong way!

This problem is not devastating, of course. The concern, Stu Clark says, is more for the lost aluminum revenue than contaminated steel loads (see prices below).

Gertman says the volume of metal cans is divided 50-50 between aluminum and steel. After processing, the center throws away 20% of the steel cans because labels have not been removed. This may sound negative, until one considers that it means labels on 80% of

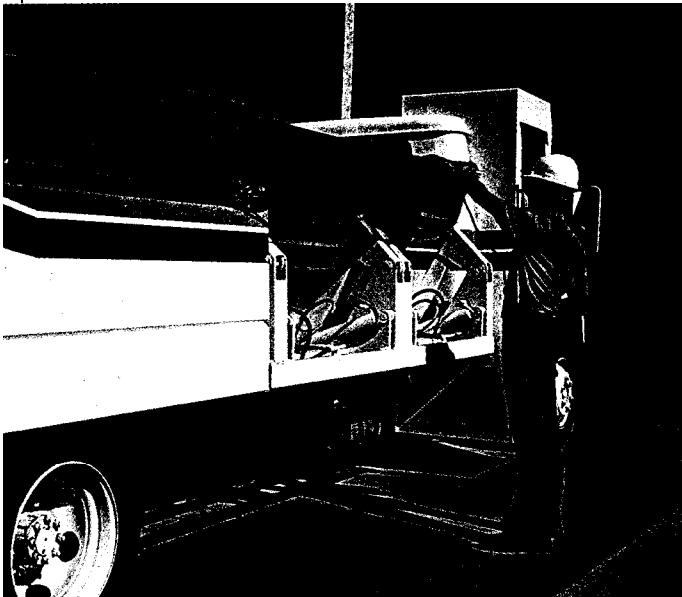
pties at the facility twice a day. When the program reaches its city-wide target, by Thanksgiving, there will be 24 compartmentalized trucks on the street.

The eight route trucks bring in approximately 40 tons a day. Processing of the material and facility maintenance keeps three men busy for one eight-hour shift.

Because the facility is designed to handle three times the volume of trucks it currently accommodates, operations are low-key right now, says Stu Clark. "We designed the facility with a large amount of conveyors, to eliminate the use of forklifts.

"We did this for the time element. Unloading time will be critical when we go city-wide, with 24 recycling trucks hitting the facility within 60 minutes. We've designed this facility so that trucks should unload in an average of two minutes each." I

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Compartmentalized trucks ho/d both cans and glass.

the steel cans are being removed by homeowners!

Cans are baled in an Ambaco baler, which can produce 12 bales per hour. Independent Paper Stock (IPS) buys the aluminum at prices ranging from \$660 to \$800 per ton; Proler International buys the tin cans at \$20/ton.

Newspaper processing consists of baling the material; the baler can process 22 tons of newsprint per hour. The operation gets from \$60 to \$70 a ton for it.

The future

San Jose and Recycle America are introducing the recycling program in phases. There are now eight collection trucks on the road daily, each of which em-

Richard Gertman of the city of San Jose formerly worked in Davis, Calif., one of California's many recycling meccas. So he's had some interesting experience.

But every city is different, and San Jose is a lot bigger than Davis. Gertman has spent the past year learning the city and tinkering with the established recycling program, in search of ever-higher citizen participation rates.

A three-part program instituted by the city and its contractor, Waste Management's Recycle America Subsidiary, has raised participation rates from 45% to 60%. The program, used in a targeted area, employed door hangers, a door-to-door survey, and follow-up phone calls to non participants to ask them why.

"We are prompting people," says Gertman. "Some people, it turns out, were not sure separating the materials was worth doing. We've also

tried the use of volunteer block leaders, an idea we borrowed from Boulder, Colo."

The only problem the program has faced thus far is that a few of the residents who move from one area (served by the Program) of the city to another are taking their three plastic bins with them. The result is citizens who move into the area served by the program have to get new bins - and those who've moved call to complain that no one in their neighborhood is participating!

"We've had very little problem with theft," says Stu Clark of Recycle America. "We think the reason is the mixing of steel cans with the aluminum.

"Aluminum is the best recyclable to steal, if you're scavenging recyclables. Obviously potential scavengers in San Jose don't want to go through the trouble of separating. In addition, the three stacking bins connote ownership.