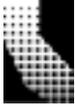


infoCycling

Summer 2003



A newsletter providing assistance in waste reduction to local governments, State agencies, and large State facilities. Published by Cal/EPA's **Integrated Waste Management Board**.

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Caltrans—thinking outside the box when it comes to recycling, reducing, and reusing

inside

- CalTrans—thinking outside the box* 1 The California Department of Transportation (Caltrans) is the State's manager of interregional transportation services. Caltrans professionals either work in headquarters or in one of their 12 district offices, 13 laboratories, or 304 maintenance stations throughout California. Civil and system engineers, maintenance workers, planners, environmental specialists, managers, and administrators comprise the approximate 23,000 Caltrans employees. Together these employees make recycling a reality.
- City of Brea's self-haul study* 3
- Food diversion hierarchy* 5
- Waste reduction efforts at public venues and events* 10 Caltrans recycles a wide variety of materials such as:
- Concrete, asphalt, scrap metal, salvageable items, and tree trimmings from its construction and maintenance projects.
 - Used tires from Caltrans' vehicle fleet and other sources.
 - Paper, cardboard, special plastics, and toner cartridges from headquarters, the district offices, laboratories, and maintenance shops.
- Single-stream collection workshop* 11
- Chula Vista's single-stream recycling program* 12
- Editor's note* 18 The California Integrated Waste Management Board's (CIWMB) 1999 Solid Waste Characterization Study (www.ciwmb.ca.gov/WasteChar/Study1999/) estimates that 12 percent of landfill mass is generated from construction and demolition operations. Through highway improvement projects, such as the reconstruction of old roads and bridges and the creation of new ones, tons of concrete, asphalt, and scrap metal are generated. As a good steward to its resources, Caltrans is able to divert much of this construction by-product from entering into California landfills through a variety of methods. For example, when maintenance crews repair roadway surfaces, replacing the existing pavement is sometimes required. As the old asphalt is removed from the highway it can be reused as shoulder backing. Shoulders provide motorists with a place to pull over during an emergency. Similarly, when concrete is removed, it can be crushed and used as aggregate base material underneath roadway surfaces. Concrete can also be reused for erosion

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Phone: (916) 341-6240

E-mail:

twebb@ciwmb.ca.gov

Editor, Tracy Webb

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The energy challenge facing California is real.

Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, **Flex Your Power** and visit www.consumerenergycenter.org/flex/index.html.

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November 2003

control or riprap. (Riprap is the term used when concrete or crushed rock is used to stabilize an embankment or soft ground.) Recycling activities are not limited to the concrete and asphalt generated. Caltrans also uses every opportunity to salvage items, such as guardrails, light standards, and light fixtures. When these items are removed from highways, they are stored at salvage yards and used at a later time to replace damaged ones. Metal items that cannot be salvaged are placed in scrap metal containers.

Some examples of items collected include old damaged highway signs, twisted metal posts, and car bumpers left along the highways. Caltrans made arrangements with contractors to pick up these scrap metals for recycling.

Caltrans works in partnerships with various businesses throughout the state. An example of these partnerships can be found with Caltrans District 4 (San Francisco-Bay Area District) and the Oakland Zoo.

The maintenance crew for District 4 is responsible for maintaining and trimming a variety of plantings within the highway right of way. Trimming the tropical acacia tree is just one of their duties. As the acacia trimmings are a favorite treat for many animals, District 4 routinely provides the Oakland Zoo with trimmings to feed their giraffes, camels, chimps, and elephants. This partnership is economical and rewarding for both parties.

Caltrans recycles trimmings from other varieties of trees and shrubs,

located along California's highways, for mulch to use as ground cover.



Camels are being fed acacia tree trimmings at the Oakland Zoo.

Caltrans has actively pursued incorporating used tires into transportation projects. Used tires are acquired from Caltrans' vehicle fleet and other sources. One example is the specification and use of rubberized asphalt concrete (RAC) for pavement application. RAC is produced by grinding rubber tires into very small particles.

Another very promising approach being implemented is shredding tires and using the tire shreds as lightweight fill material for highway embankments and behind retaining walls. Caltrans used 660,000 shredded tires along State Route 880 in Milpitas (Santa Clara County) as fill material for the construction of a new highway embankment.

Not only do these activities reduce the volume of tires that once would have been sent to landfills, but they have also been shown to be more cost-effective. For example, the cost of using tire shreds for lightweight fill material is approximately \$25 to \$40 per cubic meter compared to the cost of using

Continued on next page

conventional lightweight fill material at approximately \$50 per cubic meter.

Caltrans like so many other State agencies, local governments, and private businesses promotes office recycling. Office recycling activities include office paper (white, mixed, and newspapers), old telephone directories, and cardboard. In addition to recycling office paper, empty laser toner and inkjet cartridges from copiers and printers are returned to manufacturers for reuse.

Caltrans is another example of a department that is a good steward

of resources and one that recognizes the importance of forming partnerships with local communities. Caltrans is able to accomplish so much because it is an agency that thinks outside of the box when it comes to recycling, reducing, and reusing.

If you would like more information on these Caltrans diversion projects, contact Jack Ezekiel of Caltrans at (916) 651-8254 or Jack.Ezekiel@dot.ca.gov; or contact Pat McDermott in the CIWMB's State Agency Assistance section at (916) 341-6221 or pmcdermo@ciwmb.ca.gov.

Spotters identified self-haul trucks coming from areas other than Brea.

Self-haul study improved disposal reporting accuracy for the City of Brea

The City of Brea believed many self haulers coming to the Olinda Alpha Landfill were incorrectly stating their city of origin as Brea when, in fact, their trash originated from another jurisdiction. To address the self-haul disposal reporting problems and gather data to make findings, representatives of Orange County, the city of Brea, and the county-owned and operated Olinda Alpha Landfill developed and conducted an extensive self-haul survey at the suggestion of California Integrated Waste Management Board staff.

Conducting the survey

A total of ten employees from the city, county, and landfill were on the survey team. Many hours were devoted to planning and developing the study format, conducting the

interviews, compiling the data, and analyzing the results. The survey team interviewed the drivers of 83 self-haul trucks.

Spotters (members of the survey team) were stationed along the freeway, the county borders, the routes taken by the self-haul vehicles, and the Olinda Alpha Landfill to identify self-haul trucks coming from areas other than Brea.

Spotters had two-way communication capability so they could call ahead to a survey team member at the scale house with a description of each truck. When the spotters noticed self-haul trucks traveling from areas other than Brea, they informed the survey team

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City of Brea's self-haul study, continued from page 3

members at the scale house. Once at the scale house, all self-haul vehicles that reported their tonnage was from Brea were pulled aside and interviewed. During the interview, many drivers recanted their original statement regarding the origin of their load.

Survey results

At the end of study, the survey team gathered enough information to show that the current reported self-haul tonnage charged to Brea was incorrect. The survey found:

- 40 percent of the waste actually came from Brea.
- 15 percent of the waste origin was not determined.
- 45 percent of the waste came from other jurisdictions.

Next steps

Based on the results of the survey, Orange County increased its enforcement efforts by developing a plan for the Olinda Alpha Landfill that is designed to discourage out-of-Brea and out-of-county self-haulers from misrepresenting the origin of their loads. The plan includes:

- Clarifying surveying procedures.
- Posting additional signs in Spanish and English describing self-haul procedures/ ordinance.
- Enhancing specialized training and developing resources for scale house employees regarding how to survey

commercial and public self-haulers.

- Documenting reported addresses of origin.
- Considering increases in self-haul fees and/or establishing other fees to encourage self-haulers to utilize local processing facilities.

For additional information on the Olinda Alpha Landfill's self-haul survey, please contact one of the three representatives listed below:

Pat McCarron
Maintenance Service Director
City of Brea
(714) 990-7648
patm@ci.brea.ca.us

Sue Gordon
Manager of Environmental
Programs
County of Orange Integrated
Waste Management Department
(714) 834-4118
sue.gordon@iwmd.ocgov.com

Dave Lowry
Landfill Site Manager
Olinda Alpha Landfill
(714) 986-2391

If you have disposal reporting questions, please contact:

Sherrie Sala-Moore
California Integrated Waste
Management Board
(916) 341-6204
sherriem@ciwmb.ca.gov

Did you know?

In some jurisdictions, food waste exceeds 30 percent of the waste stream.

California promotes food diversion hierarchy

Food—all living things need it. In California, the nation's leading agricultural state, tremendous amounts of land, water, energy, chemicals, and labor are applied to produce this valuable resource. With all this invested, we need to be better stewards of our food resources, using them efficiently and eliminating waste.

The California Integrated Waste Management Board's (CIWMB) 1999 CIWMB Statewide Waste Characterization Study (www.ciwmb.ca.gov/WasteChar/Study1999/) estimates that 16 percent of the total waste disposed in the state—more than 5.5 million tons each year—is food.

In some jurisdictions, food waste exceeds 30 percent of the waste stream. According to the study, approximately 50 percent of all disposed food comes from the residential sector, while 25 percent is generated by restaurants. The remaining 25 percent is generated from grocers, schools, institutions, hotels, food processors, and other miscellaneous sources.

Much of this food is plate scrapings or food processing waste, and not suitable for human consumption. Yet, with the right infrastructure in place, there are other potential uses for surplus food, such as animal feed or compost. The diversion of surplus

food also helps reduce problems associated with waste transportation and disposal, including odors, leachate, and gas emissions.

To facilitate the development of food diversion programs, the CIWMB held the statewide Food Diversion Summit of 2002 in Sacramento.

The summit highlighted a wide variety of topics and provided stakeholders with an opportunity to discuss the challenges and possible solutions for food diversion efforts. In February 2003 the CIWMB adopted a number of recommendations derived from the summit, including:

- Development of contract concepts or legislative proposals that support food diversion programs.
- Development of a Web-based food diversion information clearinghouse.
- Promotion and development of ongoing technical assistance and resources.
- Pursuit of partnerships and working agreements with trade associations, food-related regulatory agencies, and other food-related organizations.
- Adoption of a "food waste diversion hierarchy."

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Food diversion hierarchy, continued from page 5

Contract concepts and legislative proposals

CIWMB staff will submit contract proposals and legislative proposals that promote food diversion, as contract service money is available. The legislative analysis process, where appropriate, will also be used to ensure food diversion efforts are considered.

Food diversion information clearinghouse

The CIWMB's food diversion Web site, located at www.ciwmb.ca.gov/FoodWaste/, will be enhanced to address informational needs identified at the Food Diversion Summit. Site content will be expanded to include information on:

- Best management practices.
- Food diversion facility lists.
- Food diversion how-to guides.
- Materials for food diversion education.
- Model programs and case studies.
- New publications and Web site information.
- Outreach materials, suggested outreach methods, and graphics.
- Partnership opportunities, funding sources, and cost reducing measures.
- State and industry standards and guidelines.

- Vendors and testimonials for food diversion equipment and biodegradable products.

Partnerships and promotion

As these tools and resources are being developed, CIWMB staff is promoting their use through partnerships with trade associations, food-related regulatory agencies, and other food-related organizations.

Staff is contacting entities such as the California Restaurant Association, the Association of California Food Banks, the California Department of Food and Agriculture, the California Grain and Feed Association, the Pacific Coast Rendering Association, and the International Biodegradable Products Institute in order to identify partnership opportunities and complementary outreach efforts.

Food diversion hierarchy

The food diversion hierarchy adopted by the CIWMB is consistent with the integrated waste management hierarchy in Public Resources Code section 40051, as well as the zero waste and sustainability goals of the CIWMB's 2001 Strategic Plan. Like the integrated waste management hierarchy, it is intended to be a guide to aid those who are responsible for diverting surplus food from California landfills.

There are five levels in the food diversion hierarchy: (1) waste

The food diversion hierarchy consists of five levels. Read on to obtain information about these levels.

Continued on next page

Food diversion hierarchy, continued from page 6

prevention, (2) human consumption, (3) animal feed, (4) composting and vermicomposting, and (5) environmentally safe disposal.

1. Waste prevention

Prevention of food waste conserves resources and is the most economical and efficient method of reducing food waste. Minimizing waste through practices like “first in, first out,” and “just-in-time inventory” is commonplace; however, “portion control” at restaurants is less widely used, since large portions are considered to be a major selling point.

Offering smaller portions and on-request second servings, or a “light eaters menu”, and doggie bags will ultimately help reduce overall disposal, and their associated costs. To the commercial sector, food waste prevention (www.ciwmb.ca.gov/BizWaste/FactSheets/FoodSrcv.htm) is just good business!

Schools can practice food waste minimization practices through the “offer vs. serve” option (www.ciwmb.ca.gov/Schools/WasteReduce/Food/OfferServe.htm). This practice is consistent with the federally funded school lunch program and has the added advantage of additional cost savings. Schools can also promote “zero waste lunches” (www.ciwmb.ca.gov/Schools/WasteReduce/Food/ZeroWaste.htm).

2. Human consumption

The first option for food that is still legally suitable for people to eat should be to donate it to food banks and rescue programs.

Most jurisdictions have a local food bank (www.cafoodbanks.org/) or other professionally run charitable organization (www.ciwmb.ca.gov/Reuse/Links/Food.htm) that will collect surplus food for those in need. Prepared foods can also be donated and re-served on a same-day basis.

The federal Good Samaritan Food Donation Act (www.ciwmb.ca.gov/FoodWaste/Donation/) protects donors from liability as long as they donate in good faith. Ideal donors for these programs include grocers, produce markets, restaurants, schools, food product companies, and institutions (such as prisons, hospitals, and universities).

3. Animal feed

Supplementing animal feed with food waste reduces the use of land, water, and other resources used to grow grain, alfalfa, and other plants currently dedicated for that purpose.

Food that is not suitable for human consumption should be used as an animal feed supplement as allowed under State and federal guidelines designed to prevent the transmission of disease.

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Food diversion hierarchy, continued from page 7

For more information on the guidelines, write to: California Department of Food and Agriculture, Animal Health Branch, 1220 N Street, Room A107, Sacramento, CA 95814 or call (916) 654-1447.

Vegetable trimmings can be fed to pet rabbits or chickens, and commercial generators can make informal arrangements with local farmers and ranchers to divert pre-consumer food such as excess produce or culls from the garbage.

It is also suggested that food processors, bakeries, or other large generators of surplus food try to make arrangements with an animal feed manufacturer by calling the California Grain and Feed Association (www.cgfa.org/) at (916) 441-2272.

Significant amounts of postconsumer surplus food can be collected by a limited number of pig farmers licensed by the California Department of Food and Agriculture's Animal Health Branch. To locate the nearest licensed pig farmer, call the Animal Health Branch at (916) 657-5225.

Improper disposal of grease causes many problems such as sewer blockage and even beach closures. Rendering or tallow companies (www.ciwmb.ca.gov/FoodWaste/Render.htm) collect grease, meat, bone, and other animal by-products for recycling into a wide variety of products.

4. Composting and vermicomposting

Food that is unsuitable for human or animal consumption can still be composted into a beneficial soil amendment, thus greatly reducing the amount of material going into landfills.

These materials may include spoiled fruits and vegetables, stale bakery items, kitchen prep trimmings, and leftover plate scrapings. For additional information, contact the California Department of Food and Agriculture's Animal Health Branch at (916) 654-1447.

Most city and county governments currently do not have the infrastructure developed to initiate large-scale food collection and composting systems. In addition to favorable economics, hauling capabilities, an education campaign, and a well-developed implementation plan, local governments also need an appropriately permitted compost facility (www.ciwmb.ca.gov/FoodWaste/Compost/Facility.htm) to partner with.

Typically, jurisdictions initiate a pilot program by collecting pre-consumer food waste from commercial food generators before attempting to tackle the residential sector. However, the most common methods of diverting residential food waste at the local level are through backyard

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Food diversion hierarchy, continued from page 8

composting (www.ciwmb.ca.gov/Organics/HomeCompost/) or home vermicomposting (www.ciwmb.ca.gov/organics/Worms/).

On-site composting and vermicomposting is an excellent option for schools, institutions, and in some cases the commercial sector.

For schools, a program of composting (www.ciwmb.ca.gov/FoodWaste/Compost/) or vermicomposting (www.ciwmb.ca.gov/Schools/Curriculum/Worms/) can go hand in hand with curriculum and a school gardening project (www.ciwmb.ca.gov/Schools/WasteReduce/Food/SchoolGarden.htm).

Schools, institutions, and some restaurants or grocers are exploring in-vessel technologies (www.ciwmb.ca.gov/FoodWaste/Compost/InVessel.htm) and composting their materials on site.

In-vessel systems typically involve a significant initial investment; however, the generator may be able to amortize this cost over time through avoided disposal costs and/or the sale of the compost generated.

5. Environmentally safe disposal

When all diversion options have been fully explored and conditions still do not permit an alternative,

disposal in a permitted solid waste facility may be the only remaining environmentally sound option. Even so, it is important to note that local conditions may change over time and that diversion opportunities should be re-evaluated.

The Food Diversion Summit of 2002 proved to be a successful forum, not only for information sharing, but also as an opportunity for stakeholder input on the best methods for increasing food diversion in California.

Implementing the summit's recommendations will prove instrumental in achieving the CIWMB's zero waste and sustainability goals. Once again, California is leading the way—ensuring that valuable food once landfilled is now put to its best and highest use.

To learn more about the Food Diversion Summit of 2002, and the role of the CIWMB in providing technical assistance for food diversion efforts in California, please contact Terry Brennan at tbrennan@ciwmb.ca.gov or (916) 341-6578, or visit the CIWMB's Web site at www.ciwmb.ca.gov/.

November 7, 2003—The annual Enviro Fair regional workshop will be conducted at the Del Mar Fairgrounds.

Waste reduction efforts at public venues and events are underway

Sports stadiums, zoos, museums, concert halls, golf courses, racetracks, convention centers, amusement parks, municipal parks, fairgrounds, food festivals, and cultural events...the list of large public venues and events in California is seemingly endless.

Although there is no State law mandating local and private venue facilities to reduce and recycle, the sheer number of large venues and events in California and the significant quantity of waste they generate makes them likely candidates for assisting cities and counties in meeting and/or maintaining 50 percent waste reduction mandated by the Integrated Waste Management Act of 1989.

Recreational facilities can also provide a prime opportunity for educating the public about waste reduction, reuse, and recycling. According to a survey performed by the California State Parks Department, more than 74 percent of California households visit museums and historic sites each year, and 66 percent visit zoos and arboretums (tree and shrub exhibits).

A preliminary survey of venues conducted by CIWMB staff in April of 2002 confirmed that most

private and locally operated venues do not have formal waste reduction programs in place, and few of those with programs do more than recycle cans, bottles, and cardboard. One reason so few programs exist may be that venues and special events represent a complex ownership, management, and operational structure that can make implementing a waste reduction program challenging.

Although a jurisdiction may own a venue property, an independent board or private management company frequently operates the venue itself. A single facility such as a convention center may host a hundred different events or groups in a single year, each with its own separate event promoter, and a different mix of vendors and concessionaires.

To address the largely untapped waste reduction potential these events and facilities present, the CIWMB is working to make waste reduction tools and resources available to everyone involved in venues and events—from the jurisdiction where the venue or event is located, to owners and managers, concessionaires and vendors, and the public.

The tools are available on the CIWMB's Web site (www.ciwmb.ca.gov/venues). The Web site is a "portal" directing public and private users to existing CIWMB topics and resources of special interest, as well as to downloadable tools such as sample ordinances and policies, calculation

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Waste reduction efforts at public venues and events, continued from page 10

spreadsheets, case studies, and links to government and industry resources such as recycled-content suppliers and recycled materials buyers. Also included on the site will be downloadable guides and brochures that can be distributed by local governments with event and municipal park permits or during facility inspections.

These resources complement the information already available on the CIWMB's State Agency Web site (www.ciwmb.ca.gov/StateAgency). This Web site assists State government waste reduction and recycling coordinators and procurement officers in their efforts to reduce, reuse, recycle, and buy recycled as mandated by Chapter 764, Statutes of 1999 (Strom-Martin, AB 75).

This act requires that by January 1, 2002, each State agency and large State facility divert from landfill disposal or transformation facilities at least 25 percent of all solid waste it generates. On and after January 1, 2004, the mandated diversion rate becomes 50 percent. Included in the

mandate are State-run public venues such as fairgrounds and parks.

The CIWMB in coordination with the new Venues and Special Events Recycling Council (VSERC) of the California Resource Recovery Association (CRRRA) will be providing regional workshops and opportunities for networking with venues and events industry and professionals.

The first workshop was conducted in conjunction with the annual CRRRA conference in Ontario on July 21, 2003, and the second workshop will be conducted at the 22nd District Agricultural Association's annual Enviro Fair on November 7, 2003, at the Del Mar Fairgrounds.

For information about the CRRRA workshop, contact the CRRRA Web site www.crra.com. More information about the Enviro Fair can be found at www.sdfair.com. For questions about the CIWMB's large venue and event waste reduction project, please contact Chris Schmidle at (916) 341-6210 or cschmidl@ciwmb.ca.gov.

Read on for information on the April 2, 2003, CIWMB single-stream collection of recyclables workshop.

Single-stream collection of recyclables workshop

Because a large number of jurisdictions are switching from multi-stream recycling collection to single-stream recycling collection, the California Integrated Waste Management Board (CIWMB) held a "Single-Stream Collection of Recyclables Workshop" on April 2,

2003, to discuss the designing, implementing, monitoring, and promoting of single-stream recycling collection. The workshop consisted of eight panel members, which included staff from Chula Vista, paper brokers, paper

Continued on page 12

Single-stream collection workshop, continued from page 11

manufacturers, equipment manufacturers, and facility operators. Topics discussed included:

- Historical multi-stream recycling collection information.
- How to implement a single-stream recycling collection program.
- Benefits in using new and different technology.
- How to deal with the higher contamination levels after program implementation.

- Improved aesthetics, convenience, pounds per setout, and safety.

Beginning on this page, you can read about Chula Vista's single-stream recycling collection program. In 2003, look for a summary of the workshop on the CIWMB's Local Government Central Web site (www.ciwmb.ca.gov/LGCentral/).

If you have any questions about this workshop, please contact Cara Morgan at (916) 341-6253 or cmorgan@ciwmb.ca.gov.

Communication and planning is imperative before implementing a single-stream recycling collection program.

Chula Vista's single-stream recycling collection program is a success

In 1990, the City of Chula Vista started a residential curbside recycling program for approximately 20,000 households.

Chula Vista's curbside program now serves 43,000 households and is growing rapidly. The city went from approximately 130,000 residents to 200,000 residents in the last 12 years. A population increase of up to 100,000 residents is expected within the next 10 to 15 years.

In 1990, each household was provided an 18-gallon curbside recycling container to recycle bottles and cans. Residents recycled their newspapers by placing them in paper bags. Cardboard and mixed paper were added in 1997 and residents were instructed to place mixed paper into paper bags and break down

and cut cardboard into manageable pieces. There was only 2 ½ to 3 percent contamination in 1997.

Chula Vista structured a very positive revenue-sharing contract with Pacific Waste Services. In a two-year period, 1999–2000, Chula Vista generated almost \$300,000 in revenue that went back into public education. However, as of March 2002, the city was only collecting about 700 tons of recyclables from those 43,000 residential single-family homes. This included mobile home parks and dwellings of five units or less.

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Chula Vista's single-stream recycling program, continued from page 12

In 2002, Pacific Waste Services contacted Chula Vista about transitioning to a single-stream recycling collection program.

Switching to single-stream recycling collection from multi-stream recycling collection

Prior to implementing a single-stream recycling program, the recyclables collected at the curb were separated by the residents into four streams: newsprint, mixed paper, corrugated cardboard, and food and beverage containers.

Contamination (mixing trash with recyclables) levels were low when residents separated their own recyclables. In addition, the effort required by the processors to process the recyclables for resale was minimal. The city also provided a separate weekly yard waste collection program. Drivers manually loaded the recyclables into a collection truck, which provided more opportunities to check for contamination, educate the residents about proper setouts, and further minimize the effort required to process the recyclables for resale.

Concerns about switching to a single-stream recycling collection program included the following:

- Increased contamination levels because residents would be allowed to place all recyclables into one container.

- Increased costs for processing commingled recyclables and concern that these costs would not be offset by revenue generated.
- Increased processing costs could create upward pressure on recycling service rates.
- Increased responsibilities of the processor.
- Reduced opportunities for drivers to identify and remove trash from the recyclables and to notify residents about trash found in the recyclables.

Deciding factors on switching from multi-stream to single-stream collection included the following:

- Aesthetics and improved litter control—The blue color-coded recycle carts with lids used in the single-stream recycling program allowed recyclables to be stored hidden from public view and without exposure to the elements (for example, rain and wind). The curbside containers used in the multi-stream recycling program exposed recyclables to public view and the elements.
- Convenience should lead to greater participation—It is easier for residents to place all of their recyclables into one

Continued on page 14

Maintaining a successful program takes a continuing effort by the city, the hauler, and the processor to educate the public.

container and get the recyclables to the curb in one container. In the multi-stream program residents had to separate their recyclables and make multiple trips to the curb.

- Cost effectiveness and convenience— Pacific Waste Services and Chula Vista agreed to a formula that included collection efficiencies, avoided disposal, and commodity revenue, which reduced the risk of rate increases. Avoided disposal is a savings that reduces costs, and revenue is a source of funding that offsets costs. The formula includes both. In addition, the new program structure offered a cost-effective and efficient alternative for small businesses that were on a comparable manual trash service.
- Increased recycling capacity encourages increased diversion—The recycling cart is available in 64- and 96-gallon sizes, which are larger than the standard 18-gallon curbside containers that were used in the multi-stream recycling program. This was particularly important in achieving Chula Vista's goal of capturing more mixed paper and cardboard.

Implementing single-stream recycling collection

Goals

Chula Vista's goals included:

- Increasing its diversion rate from 34 percent to 50 percent.

- Implementing a diversion program easier for the residents to use.
- Improving the city's appearance.
- Providing a safer environment for the employees and residents of Chula Vista.
- Reducing vehicle emissions.

Implementing a single-stream recycling collection program proved to be a good way to meet these goals.

Communication and education

Communication and education are vital to a successful single-stream recycling collection program. Maintaining a successful program takes a continuing effort by the city, the hauler, and the processor to educate the public.

Converting to single-stream recycling collection was successful due to the cooperation and the support of Pacific Waste Services, residents, small businesses, and Chula Vista's city council (policymakers). The City of Chula Vista met with Pacific Waste Services and the city council on a regular basis to provide progress reports as the program was developed and rolled out.

Prior to implementing the single-stream recycling collection program, Pacific Waste Services and the City of Chula Vista hosted

Continued on next page

Chula Vista's single-stream recycling program, continued from page 14

a number of public workshops and provided printed public education material to introduce the residents of Chula Vista to the program.

In addition, brochures were sent out notifying customers of the new single-stream recycling collection program. The brochure explained the new program and gave residents an option to pick the size of their trash and recycling carts. Three mailers were sent prior to delivering the recycling and trash carts.

Customer service representatives are a big part of the single-stream recycling collection program's implementation and continued success.

Pacific Waste and Chula Vista staff teamed up to answer phones and assist customers while making adjustments to the new program. Also, junior college students were hired and participated in an eight-week evening training program along with Pacific Waste and Chula Vista staff.

When the program was implemented, they had an average of 1,500 to 2,000 calls per day. After the initial 6 months, the calls went down to approximately 650 per day. Most of the calls are requests for basic information or to clarify instructions.

Recycling collection

Chula Vista introduced the variable rate system (also known as volume-based and pay-as-you-throw) at the same time that they implemented the single-stream recycling collection program. A

variable rate system charges people for trash service based on the unit or amount of service they actually use. The city's goal was to offer more service at the same rate, purchase new carts and new trucks, and increase recycling.

Residents now have a choice of three sizes of containers for trash: a 96-gallon, a 64-gallon, or a 32-gallon cart. If a customer did not choose a specific trash cart size, they were automatically given a 64-gallon cart for their trash and a 96-gallon cart for their recycling. The 96-gallon cart for recycling is automatic regardless of what cart size you choose for trash. There is no charge for the recycling cart.

Almost immediately recycling carts were on the curb. In most cases, the recycling carts were more than half full. In some cases residents asked for extra recycling carts and these requests continue to increase.

The new recycling and trash carts improve the look of the city and streets. Lost or stolen trashcans and missing lids are no longer a problem. Trash and recycling carts always have lids and are rarely overflowing, thus litter issues on trash collection day are greatly reduced. The standard color-coded (black) trash and (blue) recycling carts make it easy for drivers and residents to keep trash and recyclables separated.

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Chula Vista's single-stream recycling program, continued from page 15

Chula Vista is now collecting approximately 1500 tons of recyclables per month. This has more than doubled since implementing the single-stream recycling program in March 2002.

Chula Vista previously collected 700 tons per month from the same 43,000 households. The trash weight per household has gone down with the variable rates, and the recycling pounds per household have dramatically increased.

Along with other factors (such as the economy), the larger recycling cart contributed to the increase of recycling. The contamination level varied between six and ten percent after switching to single-stream recycling collection and has now leveled off at nine percent. Public education efforts such as "Oops" tags, "recycling ranger" education efforts, and direct mailings have been implemented to help reduce contamination levels even further.

Using new and different technology

Chula Vista automated their collection system to make it more efficient and safer. Automation is safer because the carts that are used have wheels and can be easily maneuvered by residents, thus eliminating the need to lift and carry the containers.

Also the carts are serviced using an automated truck, which eliminates the need for drivers to manually service the containers. The trucks are equipped with a

front-loading system. (Please see the photo below.) The front-loading system helps reduce contamination because the driver is able to see what is being loaded into the truck.



Chula Vista's automated recycling and trash collection truck.

Converting to an alternative clean fuel was a stipulation when purchasing new vehicles (trash and recycling collection trucks). Pacific Waste Services selected biofuel as their alternative clean fuel.

Enforcement

Pacific Waste and the city issue "Oops" tags to residents who make a mistake in the program, such as trash found in the recycle cart or vice versa. These "Oops" tags have the applicable brochure attached explaining how to correct the mistake. A recycling guide is mailed to each household annually and messages and reminders are included periodically in the billing invoices.

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Chula Vista's single-stream recycling program, continued from page 16

Customers can get up to three "Oops" tags in a 90-day period before they are fined. Also, after three "Oops" tags, the customer will receive a letter from the city warning them about the fine. After the three "Oops" tags and the letter, the customer can receive a fine of \$3, \$5 or \$10.

Chula Vista's city employees levy fines. City employees—"recycling rangers"—implement and enforce the city's various recycling programs. Recycling rangers can be there in a matter of minutes because they are often in the field and in the same areas that the trucks are servicing.

The recycling rangers write the "Oops" tags, which are then sent to Pacific Waste Services and added onto a customer's bill. If a customer does not pay the fine, then the fines become a lien on the customer's property.

Information on the fines and property lien can be read in Chula Vista's Municipal Codes, Title 8, Chapter 8.24, section 8.24.180, Payment of solid waste collection charges—Penalty for delinquency. To access the complete municipal code, go to

[http://search.mrsc.org/nxt/gateway.dll?f=templates&fn=cvstpage.htm\\$vid=municodes:ChulaVista](http://search.mrsc.org/nxt/gateway.dll?f=templates&fn=cvstpage.htm$vid=municodes:ChulaVista) .

If Pacific Waste Services, the hauler, finds a problem on the street (for example, a scavenger stealing recyclables), they can radio or call the City of Chula Vista's recycling rangers. Scavengers are not fined; they are observed for as long as possible and their recyclables are confiscated. The city collects evidence for prosecution of multiple offenses and a violation notice can be issued.

In addition, the recycling rangers leave positive notices at a number of locations each day, thanking the residents for their participation and encouraging them to let others know that recycling is good for the environment and can help reduce their monthly trash costs.

If you have any questions regarding Chula Vista's single-stream recycling collection program, please contact Mike Mathias with Pacific Waste Services at (619) 656-3530 or Mike.Mathias@awin.com, or contact Michael Meacham with the City of Chula Vista at (619) 691-5031 or mmeacham@ci.chula-vista.ca.us.

Editor's note

I hope you enjoyed this edition of *infoCycling*.

In the fall 2003 edition of *infoCycling* look for an article on the 2001 waste inflow and outflow maps and the new disposal reporting system reports.

Please contact me with suggestions on articles you would like to see included in *infoCycling* and announcements of events in your jurisdiction or at your State agency. You can reach me at (916) 341-6240 or twebb@ciwmb.ca.gov.

Your comments and suggestions on *infoCycling* are always welcome!

Tracy



California Integrated Waste Management Board
1001 I Street
P.O. Box 4025
Sacramento, CA 95812-4025