

infoCycling



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

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Easy-to-use tool to characterize construction and demolition waste

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Construction and demolition (C&D) waste has become a larger portion of the waste stream in recent years. Jurisdictions requested a simple, easy-to-use tool to determine whether C&D diversion programs were needed. The California Integrated Waste Management Board created a new tool to assist jurisdictions in characterizing their C&D disposed waste stream. The two-part tool consists of:

- *A Method of Visual Characterization of Disposed Waste from Construction and Demolition Activities*—This step-by-step guide explains how to conduct a C&D waste characterization study by visually estimating the composition of C&D samples. The guide can be accessed at www.ciwmb.ca.gov/Publications/default.asp?pubid=1224.
- A Construction and Demolition Waste Stream Composition Calculator—This Excel-based tool uses data from the C&D samples to determine the percent composition of the various materials in the C&D disposed waste stream. The calculator can be accessed at www.ciwmb.ca.gov/WasteChar/Calculator/Default.htm.

If you have any questions regarding this tool, please contact Nancy Carr at (916) 341-6216 or ncarr@ciwmb.ca.gov. Or, contact Tom Rudy at (916) 341-6229 or trudy@ciwmb.ca.gov.

The second in a series of articles discussing the Targeted Statewide Waste Characterization Study begins on page 2.



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Phone: (916) 341-6240
E-mail: twebb@ciwmb.ca.gov

Editor, Tracy Webb

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Detailed characterization of residuals at materials recovery facilities

This is the second in a series of articles discussing the *Targeted Statewide Waste Characterization Study*, published by the California Integrated Waste Management Board (CIWMB) in 2006. This complex study includes detailed characterization and quantification of the following distinct waste streams:

- Disposal and diversion for selected industry groups.
- Residuals from materials recovery facilities (MRF).
- Disposal from construction and demolition (C&D) activities.
- Disposal from the commercial self-haul and loose drop-box sector.

In the Summer 2006 Edition of *infoCycling*, we discussed the C&D portion of the study. In this edition, we discuss the evaluation of MRF residuals. (See the picture of a MRF on this page.) Subsequent editions of *infoCycling* will contain articles regarding the remaining parts of the study.



Materials Recovery Facility (MRF)

The purpose of the MRF residual characterization study was to estimate the quantity and composition of residuals generated from various types of MRFs throughout California. Residuals are the solid waste that remains after processing has removed the recoverable materials. Currently, residuals are sent to a landfill for disposal.

This is the first time a MRF residual study of this type has been attempted in California. The information can be used for the evaluation of potential processing improvements, through technology and policy alike, with the goal to further increase diversion at MRFs. The information may also be useful in discussions of MRF residuals as fuel for emerging technology facilities. Four types of MRFs were examined in this study, as described below:

1. **Multi-stream** MRFs that receive and process multiple types of recyclables separately. Incoming recyclables may be collected in a source-separated manner or from a curbside dual-stream diversion program that separates paper from containers.

Continued on next page

The MRF residual characterization study estimated the quantity and composition of residuals generated from various types of MRFs throughout California.

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2. **Single-Stream** MRFs that sort individual recyclable materials from recyclables that have been collected in one stream (for example, paper and containers mixed together).
3. **Mixed Waste Processing Facilities (MWPF)**, (sometimes called "dirty MRFs"), that remove one or more recyclable materials from municipal solid waste (MSW) streams.
4. **Construction and Demolition (C&D)** Processing facilities that separate one or more materials from mixed construction and/or demolition debris.

A total of 390 samples were collected from 13 different MRF processing lines. Each sample was sorted into 79 different material types. Data from the samples was aggregated to develop residual composition profiles for each type of MRF and then aggregated again to get the overall composition of MRF residuals statewide.

Although the single-stream variety of MRFs are the most prevalent (estimated at 46 percent of all MRFs statewide), mixed waste processing facilities contribute the vast majority of residual tonnage to the disposed waste stream.

Mixed waste processing facilities produced an estimated 6,678,200 tons of residuals, or 90.6 percent of the total quantity of statewide residuals for 2005. The other MRF type contributions were single stream at 496,600 tons or 6.7 percent, multi-stream at 35,900 tons or 0.5 percent, and C&D at 161,700 tons or 2.2 percent.

The findings from the study are quite interesting. The composition of residuals for each MRF type are as varied as the MRFs themselves. Overall, of the estimated 7,372,456 total tons of residuals from all MRF types combined:

- 2,406,114 tons, or 32.6 percent is paper.
- 1,926,785 tons, or 26.1 percent is organic material.
- 1,266,737 tons, or 17.2 percent are plastic products.

The pie chart on page 4 provides a summary of the composition of the residuals from all MRF types combined.

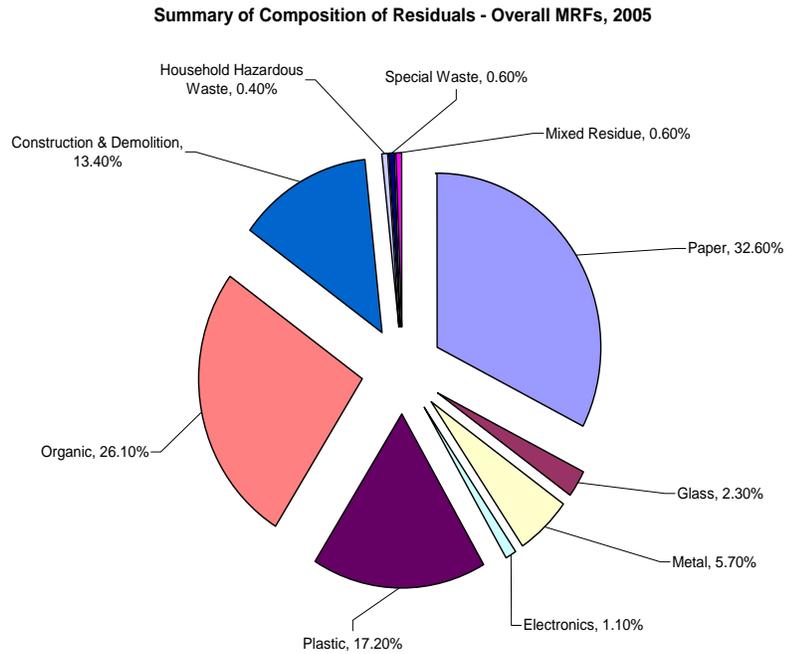
Where do I get more information?

For more information on the *Targeted Statewide Waste Characterization Study: Characterization and Quantification of Residuals from Materials Recovery Facilities*, contact Nancy Carr at (916) 341-6216 or ncarr@ciwmb.ca.gov. Or, contact Tom Rudy at (916) 341-6229 or trudy@ciwmb.ca.gov.

The report, which contains similar composition charts and tabulated data for each type of MRF, as well as overall for all MRF types combined, can be found in the CIWMB publication catalog at www.ciwmb.ca.gov/Publications/default.asp?pubid=1182.

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Waste characterization, continued from page 3



Large venue facilities and large events—annual reporting

*Jurisdictions—
Read on to find
out how the
new data
collection sheet
and the
accompanying
letter can assist
you.*

The electronic annual report (EAR) released by the California Integrated Waste Management Board (CIWMB) on September 13, 2006, includes a section addressing waste management at large venue facilities and large events (large venues and events).

Large venues include facilities such as stadiums, convention centers, movie theaters, airports, and amusement parks. Examples of large events include food or cultural festivals, golf tournaments or other sporting events, and flea markets.

For more information on what is considered a large venue or event, see the web page Definitions: FAQs About AB 2176 at

www.ciwmb.ca.gov/Venues/Mandates/Definitions.htm.

Each jurisdiction is required by statute to report to the CIWMB information about waste diversion programs at the top 10 percent of large venues and events located within their jurisdictional boundaries. The top 10 percent is based upon the amounts of waste generated. The information asked in the EAR about large venues and events includes:

- Descriptive information.
- Amount of waste disposed.
- Diversion programs.

Continued on next page

Large venue facilities and large events, continued from page 4

Data collection sheet and letter

To assist jurisdictions in collecting this information from large venues and events, the CIWMB is providing a data collection sheet that jurisdictions may choose to provide to large venues and events to fill out. The data collection sheet is a basic version of the large venues and events portion of the EAR.

Once a jurisdiction receives the completed data sheet, it should have all the information required to complete the large venues and events section of the EAR for that venue or event.

A letter to accompany the data collection sheet is also available that explains the statutory requirements and provides some detail to assist large venues staff and event coordinators in completing the form. The data collection sheet and the accompanying letter can be found on the CIWMB News and Events web page at www.ciwmb.ca.gov/Venues/NewsEvents/Default.htm.

Networking web pages

CIWMB staff is often asked by jurisdictions and large venue and event waste reduction coordinators what other jurisdictions and large venues and events are doing to promote waste reduction. To address this, the CIWMB will be adding networking web pages to their Waste Reduction at Large Venue Facilities and Large Events website in the near future.

The CIWMB is looking for links to large venues and events web pages with waste reduction information developed by cities and counties as well as contact information for large venues and events with waste diversion programs in place. Please forward any relevant information to Debra Kustic at dkustic@ciwmb.ca.gov.

CIWMB Contact information

If you have questions regarding large venues and events waste diversion programs, contact Debra Kustic at (916) 341-6206 or dkustic@ciwmb.ca.gov. For information regarding mandates relating to large venues and events waste diversion, please visit www.ciwmb.ca.gov/Venues/Mandates/Default.htm.

Did you know?

New specifications are expected to increase the statewide use of compost and mulch.

New Caltrans compost and mulch use specifications

The California Integrated Waste Management Board (CIWMB) is funding a project to increase the statewide use of compost and mulch by the California Department of Transportation

(Caltrans). Participants include the CIWMB, Caltrans, University of California Riverside Extension, Association of Compost Producers,

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Caltrans compost and mulch use specifications, continued from page 5

United States Composting Council, erosion control professionals, and Soil Control Laboratories.

Compost and mulch use categories

Caltrans identified several compost and mulch use categories.

Compost and mulch use categories include:

- Backfill.
- Hydroseed.
- Compost blankets.
- Compost filter berms.
- Biofiltration strips.
- Biofiltration swales.
- Mulch.
- Drill seeding.

Compost and mulch use specifications

The Caltrans Landscape Architecture Program, in partnership with the CIWMB, recently completed the new compost and mulch use specifications and is in the process of receiving internal and external approvals.

The CIWMB anticipates that Caltrans will officially adopt the specifications in December 2006. Many local government public works departments rely on Caltrans to develop and test specifications. The local public works departments are expected to adopt Caltrans compost and mulch use specifications, resulting in increased local diversion of organics.

Caltrans use of compost and mulch

Compost

Caltrans uses compost statewide in design and maintenance projects, primarily in hydroseeding for erosion control.

In a recent document titled "Compost Use On State Highway Applications," (www.epa.gov/epaoswer/non-hw/compost/highway/), the Composting Council Research and Education Foundation and United States Composting Council estimated that Caltrans has a potential market for compost of at least 3,350,000 cubic yards and as much as 6,725,000 cubic yards.

These figures are based on annual applications of one to two inches of material on all landscaped acreage (for example, land that Caltrans has prepared design plans for) but do not include additional acreage under Caltrans authority.

However, cost barriers may prevent Caltrans from using this much material. The CIWMB believes a more realistic goal would be to increase Caltrans' procurement of compost by hundreds of thousands of cubic yards on an annual basis.

Mulch

Caltrans uses mulch throughout California, applying coarse organic materials to highway roadsides to prevent erosion and suppress weed growth. Mulch is used to cover ground between existing

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Caltrans compost and mulch use specifications, continued from page 6

container-sized plants. Mulch biodegrades slowly and typically only requires reapplication every 2–3 years.

Diversion resulting from the Caltrans project cannot be determined until after Caltrans begins implementing new specifications. Caltrans' use of compost and mulch will be measured during 2007 and succeeding years to measure the increase in procurement of compost and mulch.

Improving Vegetation Establishment and Erosion Control with Compost-Based Specifications workshops

The CIWMB, in partnership with the Caltrans Headquarters Landscape Architecture Program, sponsored "Improving Vegetation Establishment and Erosion Control with Compost-Based Specifications" workshops in the summer and fall of 2006. The goal of the workshops was to increase Caltrans procurement of compost and mulch for roadside applications.

A series of five workshops were held across California to introduce the new compost and mulch use specifications to:

- Caltrans district designers.
- Landscape architects.
- Biologists.
- Stormwater quality coordinators.

Workshops were held in Los Angeles on August 22, in San Diego on August 24, in Oakland on September 26, in Fresno on September 28, and in Sacramento on October 11, 2006. More information from the workshops is available at www.ciwmb.ca.gov/Organics/Erosion/Workshops/2006BMPCT/Default.htm.

What did these workshops provide?

In addition to rolling out a number of innovative methods of improving vegetation establishment and erosion control, these workshops provided designers with the opportunity to comment, suggest revisions, and ask questions of a diverse team of experts regarding the new Caltrans compost and mulch use specifications and related issues.

What topics were discussed at the workshops?

Topics presented at the workshops included:

- An overview on the uses of mulches, soil amendments, and organic fertilizers.
- The benefits of compost for roadside applications, including reduced runoff, improved infiltration, improved erosion control, and filtration.

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See page 15 for information on a grant opportunity for biofuels research.

Caltrans compost and mulch use specifications, continued from page 7

- A discussion of the U.S. Composting Council's Seal of Testing Assurance Program.
- The new Caltrans compost and mulch use specifications.
- The case studies illustrating Caltrans' successful use of compost in erosion control and revegetation projects in the Tahoe basin.

These workshops are expected to result in increased use of compost and mulch by Caltrans and local road departments for erosion

control, filtration of stormwater runoff, and other applications.

Additional Information

Look for the new Caltrans compost and mulch use specifications and the *Compost Use for Landscape and Environmental Enhancement* manual on the CIWMB Organics Materials Management website (www.ciwmb.ca.gov/Organics/) in early 2007. Contact Brian Larimore at (916) 341-6579 or at blarimore@ciwmb.ca.gov if you have questions.

The CIWMB website, Deck the Halls with Less Waste This Year! is your one-stop site for all the information needed to keep excess holiday waste out of landfills.

Reduce, reuse, and recycle during the holidays!

During the holidays, we tend to generate more waste. This article highlights efforts by the California Integrated Waste Management Board (CIWMB), jurisdictions, State agencies, and large State facilities (State agencies) to curb the extra waste.

To assist jurisdictions, State agencies, and others in reducing, reusing, and recycling during the holidays, the CIWMB is encouraging everyone to "Give the Gift of Green" by decking the halls with less waste.

The CIWMB website, Deck the Halls with Less Waste This Year! (www.ciwmb.ca.gov/PublicEd/Holidays/), is your one-stop site for all the information needed to keep excess holiday waste out of landfills. These pages are loaded

with useful tips on greening your holiday season.

These tip sheets include the following:

- **No Waste Gift-Giving/Gift-Wrapping Ideas** (www.ciwmb.ca.gov/PublicEd/Holidays/NoWaste.htm) A few ideas and suggestions on alternative gift wrapping and gift-giving.
- **Waste Prevention in Gift Wrapping** (www.ciwmb.ca.gov/PublicEd/Holidays/10Ideas.htm) Breaking the "gift wrap" habit isn't easy, so here are ten simple ideas to get you started.

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Reduce, reuse, and recycle during the holidays, continued from page 8

- **It's Time to Open the Gifts**
(www.ciwmb.ca.gov/PublicEd/Holidays/Open.htm) While opening the gifts, here are a few hints to get you through the mountains of ribbon, stuffing, and wrapping.
- **Christmas Tree Recycling**
(www.ciwmb.ca.gov/Organics/Events/XmasRecycle/) Once the big day has passed and the ornaments are safely packed away for next year, there's just one thing left to do: recycle the Christmas tree.

Read on to learn about holiday waste reduction efforts by the Sacramento Area Regional Recycling Group, City of Morgan Hill, and Lanterman Developmental Center Community Industries.

Sacramento Area Regional Recycling Group Holiday Campaign—*Join the Effort!*

The Sacramento Area Regional Recycling Group promotes reducing, reusing, and recycling materials during the holidays. The group has implemented an annual Regional Holiday Recycling campaign every year since 1995.

The campaign reminds people to reduce, reuse, and recycle because more waste is generated during the holidays than any other time of year. This year's campaign will begin in mid-December 2006. The campaign officially ends January 1, 2007; however, TV and radio spots may run through mid-January 2007. Any city or county in northern California is welcome to take part in the campaign; there

is no minimum dollar amount required.

This campaign features the television (TV) spot "Reduce, Reuse, Recycle," which begins airing December 18, 2006, on Sacramento-area TV stations and cable outlets, and ends January 1, 2007. The TV spots include 15- and 30-second versions.

Expect to see various holiday materials being recycled during these TV spots. In addition, 60-second radio spots will air during the campaign on Sacramento-area radio stations. Last but not least, interviews with the group spokespersons will be conducted during the campaign. These interviews will be conducted on Sacramento-area TV talk shows, TV news stations, and radio stations.

For a summary of last year's campaign, including a list of participants, media, TV spots, and other information, see <http://ross-campbell.com/holiday/>.

What does this campaign remind people to do?

This campaign reminds people to reduce as much waste as possible during the holidays, such as packaging products and paper.

This campaign reminds people to reuse items, such as the following, for next year's holiday season:

- Boxes.
- Bows.

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Reduce, reuse, and recycle during the holidays, continued from page 9

- Ribbons.

This campaign also reminds people to recycle items, such as the following:

- Beverage containers (aluminum and plastic).
- Cardboard.
- Food containers.
- Holiday wrapping paper.

This year, the campaign will increase efforts to remind people about ways to recycle their Christmas trees. For example, most trees can be placed in curbside green waste containers for recycling. Or, the Christmas trees can be dropped off at various community locations for recycling. In mid-December 2006, look for a listing of the drop-off sites for Christmas trees at www.sacgreenteam.com.

For more information on this campaign, contact Doug Eubanks, Recycling Coordinator, Sacramento County, at (916) 875-7165, or eubanksd@saccounty.net.

Morgan Hill—Promotes reducing, reusing, and recycling during the holidays

During the holidays, an abundance of gifts and holiday cards tends to create an unusual amount of extra waste. Some gifts are packaged in Styrofoam, cardboard, plastic, or all three, and wrapped in wrapping paper with ribbons and bows.

Knowing that this is the norm for most families, the City of Morgan

Hill decided to develop a toolkit to help residents deal with the flurry of the holiday season. The city's Green Christmas Recycling Kit is a low-tech resource designed to encourage recycling during these special holiday celebrations. The kit includes:

- "How To" instructions for using the kit.
- Bag for collecting mixed paper to reuse or recycle.
- Bag for saving reusable bows and ribbons.
- Bag for collecting Styrofoam peanuts and strips to reuse or recycle.
- Envelope for collecting holiday cards with reuse ideas listed on the envelope.
- List of locations for taking your used toys and clothes.
- Bag for collecting nonreusable or nonrecyclable items.
- Response postcard for the users of the kit to let the city know how the kit worked.

While simple in design, these kits could be just the thing to keep your holiday from becoming a "hauliday." You can pick one up free at the Morgan Hill City Hall, the Booksmart in Morgan Hill, or the Community and Cultural Center in Morgan Hill. (See the photo on page 11 of the kit.)

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Reduce, reuse, and recycle during the holidays, continued from page 10



Green Christmas Recycling Kit

If you have any questions about the kit, contact Anthony Eulo, Program Administrator, City of Morgan Hill, at (408) 779-7247, or environ@morgan-hill.ca.gov.

The photo in the Morgan Hill portion of this article appears courtesy of Andi Borowski.

Lanterman Developmental Center Community Industries—Gifts made out of recycled and reused materials

Community Industries is a workshop located on the premises of Lanterman Developmental Center in the City of Pomona. Community Industries employs more than 300 developmentally disabled individuals.

Carousel Corner is a gift shop operated by Community Industries at Lanterman Developmental Center where employee-made items are offered for sale to the public. The gift shop displays a variety of handmade craft items that are creative and unique, with some of the items being seasonal

in nature. For example, expect to find holiday decorations and wonderful gifts to give during the holidays. These handmade items are mostly fabricated from recycled materials such as wood scraps, shredded paper, used clothing, and donated items. (See photos of handmade items below.)



Handmade chicken



Handmade frog

Recycled wood scraps are used for making snowmen, bookshelves, bookends, coat racks, witches, tin men, chickens, signs, and a variety of other handmade items. The items are cut to specification and then an employee will paint, decorate, and personalize each item, finalizing it for selling. (See photos of handmade items on page 12.)

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Reduce, reuse, and recycle during the holidays, continued from page 11



Handmade decorative chickens



Handmade sun wall hanging



Handmade signs and decorations

Recycled clothing is cut to size, sewn, and then placed on stuffed craft projects such as frogs, witches, dolls, pigs, and other whimsical or decorative items. Buttons are often used for eyes. (See the photo of the handmade bookends below.)



Handmade bookends

If you have any questions, contact Jerry Leggett, Lanterman Developmental Center, at (909) 839-1301, or jlegget@ldc.dds.ca.gov.

Photos in the Lanterman Developmental Center portion of this article appear courtesy of Jerry Leggett.

Educating decision-makers on recycled-content materials

The Integrated Waste Management Act directed the California Integrated Waste Management Board (CIWMB) to assist local cities, counties, and regional agencies (jurisdictions) in diverting 50 percent of the waste.

When the act was passed in 1989, California was only achieving an 11 percent diversion rate statewide. The 50 percent diversion goal was obviously a very ambitious one, requiring the implementation of innovative diversion programs throughout the state.

California surpassed 50 percent diversion in 2005 by achieving a 52 percent statewide diversion rate. While this was a great environmental accomplishment, many individual jurisdictions in the state have yet to meet the 50 percent diversion. And with the nation's eyes upon California, we are looking at the next 50 percent of waste still being disposed and how to continue to promote the best and highest use of our natural resources.

Realizing the great opportunities still to be found within our local jurisdictions, in August of 2005, CIWMB Board Members approved a two-year contract with Ogilvy World Wide (Ogilvy), a well-established public relations and government affairs firm. The concept behind this campaign was

a two-prong approach in reaching the decision-makers, those that would have influence on how a jurisdiction was to use or procure recycled-content materials as well as the local technical staff that would help implement the decisions made.

The goal is to further educate decision-makers so that they will choose to increase the use of recycled-content products within their region. This is the first time a campaign of this nature has been implemented in California.

Qualitative and quantitative research was conducted prior to the campaign launch to ensure that communication messages and vehicles would resonate with elected officials and key decision-makers.

The first phase of the campaign was the development of data through online surveys, one-on-one phone surveys, and group polling for establishing current status, trends, and needs of local jurisdictions.

Following this research, CIWMB and Ogilvy created a central message to deliver that is adaptable to local jurisdictions' needs and highlights different recycled-content materials. The data collected—with input from CIWMB staff—was helpful in creating an opportunity for an initial list of jurisdictions to use recycled-content materials and products.

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Recycled-content materials, continued from page 13

The initial outreach phase of this program will reach more than 50 jurisdictions and focus on the following products:

- Rubberized asphalt concrete.
- Organics.
- Tire-derived aggregate.
- Recycled aggregate.

The campaign's primary communication mechanism is one-on-one meetings with local elected officials (such as mayors, council members, and supervisors).

Additional communication strategies include paid advertising in appropriate trade publications, direct mail, media relations, website creation, conference participation, outreach/presentations to councils of governments, and informational material development (brochure and video).

The outreach effort also relies on third-party advocates who have successfully used selected recycled-content materials in their jurisdictions.

To date, the CIWMB in partnership with Ogilvy has experienced great success in reaching out to local elected officials, public works staff, and other interested parties. The meetings and communication

strategies increased knowledge of these recycled-content materials and products and addressed misconceptions about their use, costs, and reliability.

The program has helped educate jurisdictions on the many benefits associated with the use of recycled-content materials and provided them with resources to implement their use.

Ogilvy is tracking all meetings and communications with jurisdictions. The firm will develop a final report that will help the CIWMB to continue this great outreach effort.

The tools Ogilvy created, such as marketing and educational materials for promoting recycled-content materials, are available to all California jurisdictions. These tools can provide resources to promote procurement of recycled-content materials and help divert more resources from California's landfills.

Examples of these materials are available on the website at www.zerowaste.ca.gov/RCM.

If you have questions regarding this campaign to further educate decision-makers on increasing the use of recycled-content products, contact Jon Myers at (916) 341-445-1296, or jmyers@ciwmb.ca.gov.

Grant opportunity for biofuels research

The California Energy Commission's Public Interest Energy Research (PIER) Program supports energy research, development, and demonstration (RD&D) projects that will help improve the quality of life in California by bringing environmentally safe, affordable, and reliable energy services and products to the marketplace.

The PIER Program annually awards up to \$62 million to conduct the most promising public interest energy research by partnering with RD&D organizations including individuals, businesses, utilities, and public or private research institutions. PIER brings new energy services and products to the marketplace and

creates statewide environmental and economic benefits.

The PIER Renewables Program has released a grant solicitation for Biofuels Research Development & Demonstration.

This is a competitive grant solicitation with the intent of accelerating research, development, and demonstration of biofuel energy conversion technologies and refineries using lignocellulosic biomass (such as agricultural and forest residues and urban waste), food waste, beverages, waste grease, and crops grown for the purpose of producing energy.

The Program Opportunity Notice and application documents are posted on the California Energy Commission's website at www.energy.ca.gov/contracts/pier.html.

The deadline to submit proposals is January 4, 2007, at 4:00 p.m.

Collaborative process moves to implementation of plastic film diversion projects

During the past two years, the California Integrated Waste Management Board (CIWMB) has been engaged in a collaborative process with stakeholders (local government, industry, and environmental representatives) to examine barriers and opportunities for increasing the collection and recycling of plastic film products.

The consensus is that significant demand exists for recovered plastic film for reprocessing as plastic lumber and other durable plastic products, or as export (out of the country).

The CIWMB is focusing its efforts on increasing collection to help meet this demand. Through a

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Plastic film diversion projects, continued from page 15

collaborative process, collection projects were developed with a focus on targeting plastic films generated by the following sources:

- Agricultural (Ag).
- Residential and commercial.
- Hospitals.

CIWMB staff prepared an agenda item for the December 5, 2006, CIWMB Sustainability and Market Development Committee meeting that includes reports from key stakeholders regarding implementation of the plastic film collection projects. To access the agenda item and attachments, go to www.ciwmb.ca.gov/Agendas/, select Board Meetings, and then scroll down to Item 15.

What was the key objective?

A key objective of the collaborative process was to reach an agreement on developing projects that demonstrate practical solutions and increased diversion of plastic film. As a result of this process, the CIWMB and stakeholders have agreed upon the categories of plastic film products to target for diversion. These products are:

- Ag film.
- Grocery and merchandise bags.
- Stretch wrap.
- Hospital blue wrap.

The CIWMB and stakeholders developed projects designed to

increase the collection of these plastic film products. This process also led to:

- Funding of increased film processing capacity, either directly or indirectly.
- Interest among several recycling companies about siting new washlines (processing that uses water to clean contaminated plastic) and processing plants in California.
- Developing policy recommendations to prevent plastic litter and developing legislation to divert plastic film.
- Fostering research to support new technologies for diverting plastic film.

How were the plastic film products selected?

The plastic film products were selected based on amounts in the waste stream, contamination issues (the cleaner the better), environmental impacts, handling and disposal challenges, and potential demand.

The collaboration produced information on targeted film products for the CIWMB conference "Increasing Plastic Film and Container Collection & Recycling." Held on October 11–12, 2005, the conference provided information on collection programs, end use products, and disposal data for a broad audience.

Continued on next page

Read on to find out how the plastic film diversion projects were selected.

What was involved in planning plastic film diversion projects?

Following the Increasing Plastic Film and Container Collection & Recycling conference, CIWMB posted information on proposed projects to its website. In addition, a kickoff workshop for developing additional collection programs took place on January 25, 2006.

CIWMB presented two proposed projects, the Residential and Commercial Film Recycling Project and the Agricultural Recycling Project, and requested feedback from stakeholders on both projects. Information and presentations from the conference and workshop is available on the following CIWMB web pages:

- Increasing Plastic Film and Container Collection & Recycling Conference (www.ciwmb.ca.gov/Plastic/Events/Recycle2005/Default.htm).
- Kickoff Meeting: January 25, 2006 (www.ciwmb.ca.gov/Plastic/Film/2006Project/MtgJan25/default.htm).

Throughout the spring and summer of 2006, stakeholders and the CIWMB continued to discuss and refine the projects. Four distinct projects emerged based on targeting specific generators of plastic film waste and diversion opportunities. Detailed implementation schedules have been developed by the CIWMB and stakeholders. A common

theme in each project is the need for education and outreach.

Another focus is the development of case studies and demonstration projects to help lead the way to establishing a new and expanded plastic film collection infrastructure.

More information on all of the projects is available on the Plastic Film Cooperative Recycling Initiative web page (www.ciwmb.ca.gov/Plastic/Film/default.htm). This web page will be updated after the December 7, 2006, CIWMB meeting to reflect direction given by the Board Members regarding project implementation.

The communication channels that have been opened as a result of this process have created a network of people, businesses, and organizations that are now working in concert to increase plastic film diversion in California, and to expand the knowledge base of all those involved.

What is involved in implementing plastic film diversion projects?

With the planning phase of the plastic film collection projects complete, the CIWMB and stakeholders are ready to move to the implementation phase. The CIWMB Office of Local Assistance (OLA) will act as liaison between jurisdictions and other stakeholders, assess their needs during the implementation of the

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Pages 18–21 provide the current status of the four plastic film projects being implemented.

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projects, promote tools and best practices, and compile information on plastic film diversion opportunities.

Full implementation of the projects will continue through mid-2009 and include an annual review of projects. After the projects have been implemented, the CIWMB and stakeholders will present the final results of the entire effort at a CIWMB Board meeting and host a conference to share the results at the end of 2009.

The current status of the four projects being implemented is summarized below and on pages 19–21:

Agricultural plastic film

The ag film collection project is developing information on:

- Types, amounts, and locations of ag film.
- How to most efficiently remove ag film from the agricultural fields.
- Stakeholders needed to participate in a network to effectively promote ag film recycling.
- Existing collection and processing infrastructure and the expansion necessary for recycling ag film.

Initial collection projects will focus on, but are not limited to, the following counties:

- Imperial.
- Monterey.

- San Luis Obispo.
- San Benito.
- Santa Cruz.
- Tulare.
- Ventura.

After the installation of an automated washline that processes agricultural plastic films, a plastics company and the Ventura County Recycling Market Development Zone program hosted a grand opening of the facility on November 28, 2006.

Let us know

If a jurisdiction is considering development of or has already developed a collection program for ag plastic films, please contact your OLA representative for technical assistance and information sharing purposes. A list of OLA representatives is available at www.ciwmb.ca.gov/OLA/Contacts.asp.

Grocery and retail store plastic film drop-off

With the enactment of Chapter 845, Statutes of 2006 (Levine, AB 2449), grocery and retail stores, as defined, are required to provide drop-off recycling service for grocery and merchandise bags. To view AB 2449, go to www.ciwmb.ca.gov/Statutes/Legislation/PriorityRpt/. Three different industry partnerships and programs were already under development prior to the passage

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of AB 2449. The industry partnerships developed tools that will help in the implementation of similar diversion programs.

- The Progressive Bag Alliance (www.progressivebagalliance.com/) will continue to work with the CIWMB to help grocery and other retail stores set up successful drop-off programs. In addition, they have developed educational and promotional materials for grocery and retail stores to establish effective source reduction and recycling programs.
- The American Plastics Council (www.plasticbagrecycling.org/) will continue to provide funding for development and support of the website, which includes a searchable web-based inventory of stores and recyclers that have drop-off programs and information on setting up collection programs. Currently more than 1,400 locations are listed. The CIWMB will continue to work with industry staff to update their web-based database as the numbers of stores offering drop-off recycling grows under the requirements of AB 2449.
- The Wal-Mart Kids Recycling Challenge program (www.kidsrecyclingchallenge.com/) allows schools to earn money for diversion of retail bags from the waste stream. The program began as a 2004 pilot in limited areas of California and Salt Lake City and has expanded to cover California,

ten other western states, and Arkansas.

Recovering plastic film through curbside collection and materials recovery facilities

This project targets the collection of plastics such as plastic bags, stretch wrap, and dry cleaning film, but focuses on collecting those materials through curbside programs and separation at materials recovery facilities (MRF).

San Jose

In California, curbside collection of retail bags and plastic films in mixed recyclables as a “Bag in Bag” program option was first developed by the City of San Jose. The “Bag in Bag” program consists of bags being processed and used as postconsumer material in some end products such as composite lumber, outdoor decking and railing products, park benches, garden and lawn edging, and other durable products. The program has been successful since it began in 1993. The CIWMB has been able to identify 47 jurisdictions that have added “Bag in Bag” recycling to their curbside service.

San Juan Capistrano

Collection of bags for recycling back into bags has been successfully demonstrated in a 2005 pilot project conducted by the City of San Juan Capistrano, its hauler and MRF operator, and a plastic film manufacturer. Key information on the pilot program

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and customer survey information can be found at www.ciwmb.ca.gov/Plastic/Events/Recycle2005/ZMazboudi.pdf. This "Bag to Bag" recycling program has now been expanded to include several other southern Orange County jurisdictions. The "Bag to Bag" program consists of bags being processed and made into new plastic film bags.

Let us know

If your jurisdiction is considering development of, or has already developed a curbside collection program for plastic films, please contact your OLA representative for technical assistance and information sharing purposes.

A list of OLA representatives is available at

www.ciwmb.ca.gov/OLA/Contacts.asp.

Additional information

Local government, industry, businesses, environmental stakeholders, and the general public are encouraged to use the education and outreach materials developed by Progressive Bag Alliance. The materials are available at www.progressivebagalliance.com/toolkit.html.

In addition to curbside programs, an opportunity is available to increase the collection of bags and other plastic film products through sorting at materials recovery facilities. Some MRFs that are using automated sorting technologies experience equipment shutdowns when plastic bags and film clog their sorting equipment. As a result, they often

end up with significant cost impacts and bales of plastic film products looking for a home. The CIWMB will work with MRF operators and potential end-users to explore options for increasing the amount of film products collected by MRFs and for finding end-use markets for this material.

Hospital blue wrap

Blue wrap is sterile polypropylene film packaging used to contain surgical equipment and supplies. Some hospitals had established recycling programs for this film product, but their one buyer, a plastic lumber manufacturer, no longer wanted the material.

The CIWMB and representatives from U. S. Environmental Protection Agency Region 9, Department of Health Services, Kaiser, Department of Toxic Substances Control, the UC Davis Health System, Sutter, Catholic Health Care West, John Muir, Daughters of Charity, and other hospitals and recyclers are now working together to set up regionally targeted collection programs for blue wrap and other plastic films from hospitals.

U.S. EPA Region 9 has developed a fact sheet on Environmental Best Practices for Healthcare Facilities, including blue wrap recycling, available at

www.ciwmb.ca.gov/wpie/HealthCare/EPATote.pdf.

A hospital survey went to targeted hospitals in Northern California

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through the hospital industry, the Department of Health Services, the Department of Toxic Substances Control, and U.S. EPA Region 9 listservs to learn about the types, amounts, and existing handling practices for plastic films. Survey results were compiled at the end of November 2006.

Collection programs for hospital blue wrap and other plastic film types are being established first in Northern California before possible expansion statewide. CIWMB will contact local recycling coordinators and haulers and invite them to participate in the planning of the regional projects.

For more information on healthcare waste, visit the CIWMB's Waste Prevention Information Exchange Health Care Waste web page

(www.ciwmb.ca.gov/wpie/HealthCare/), which is a directory of informational resources for waste prevention.

What's next?

This is the first part in a series of articles to bring you more information on the expansion of plastic film diversion opportunities and programs for local government, industry, businesses, environmental stakeholders, and the general public.

If you would like more information on any of the projects being implemented, please contact Christine Flowers at (916) 341-6267 or cflowers@ciwmb.ca.gov, or contact your OLA representative. A list of OLA representatives is available at www.ciwmb.ca.gov/OLA/Contacts.asp.

Editor's note

I hope you enjoyed this edition of *infoCycling*. In the winter 2007 edition, look for an article on detailed characterization of waste disposed and diverted by selected industry groups. 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 e-mail me at twebb@ciwmb.ca.gov or reach me at (916) 341-6240.

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

Tracy