

# Government Facilities:

## *A Model for Local Government Recycling and Waste Reduction*

### Overview

Most of the attention focused on recycling and waste reduction under the Integrated Waste Management Act (AB 939, Sher, Chapter 1095, Statutes of 1989 as amended [IWMA]) has been on addressing the residential and commercial waste streams. However, government facilities can contribute significantly to a local jurisdiction's waste stream.

According to the statewide waste characterization study by the California Integrated Waste Management Board (CIWMB), public administration facilities disposed of approximately 0.4 tons per employee in 1999. That amounted to 278,112 tons per year, representing approximately 1.6 percent of the commercial waste stream. The largest waste types were:

- Leaves and grass (16.1 percent).
- Food (9.8 percent).
- Concrete (7 percent).
- White paper (6.5 percent).
- Old newsprint (5.5 percent).
- Lumber (5 percent).
- Old corrugated cardboard 4.6 percent).
- Film plastic (4.4 percent).

A variety of government facilities may be located within a jurisdiction, including the following:

- City/county government offices.
- State government offices.
- Federal government offices.
- CALTRANS facilities and road projects.
- School districts (K–12).
- Colleges and universities.
- Military bases.

- Local, regional, State, and national parks and recreation areas.
- State and federal prisons.

Following are two key components in addressing waste reduction at government facilities:

- Implementing waste prevention, recycling, and composting programs for materials generated at government facilities.
- Purchasing environmentally preferable products, including those that contain recycled content.

### Understanding the Rules for Recycling

The biggest challenge for communities addressing waste prevention and recycling at government facilities is their lack of power to regulate the actions of State and federal agencies.

Understanding the rules that apply at each level and educating facility managers about their responsibilities is important when addressing recycling issues.

#### *Local Agencies*

Recycling policies vary among local governments. In most cases, the city council or board of supervisors has passed a recycling policy that mandates certain types of in-house recycling programs.

Sacramento County recently implemented a recycling ordinance that requires all private haulers to achieve at least 30 percent diversion. The ordinance also covers county facilities, including the county's two transfer stations.

One key challenge for local governments is implementing recycling programs for community service districts (CSD). CSDs and other special districts are often formed in unincorporated areas and have their own governing body.

As a result, CSDs are not under the direct control of a city or county agency. Chapter 764, Statutes

of 1999 (AB 75, Strom-Martin) requires CSDs to report to jurisdictions on their programs and tonnages. While the provision doesn't require CSDs to comply with the IWMA requirements, it does provide information on the activities of CSDs to cities and counties. The local jurisdictions can include this information in their annual reports.

### ***State Agencies***

AB 75, implemented in 1999, mandates that State agencies comply with IWMA diversion requirements. Public Resources Code (PRC) sections 42920–42928 contain the following requirements:

- Requires each State agency to develop an integrated waste management plan. State agencies may prepare their own plan or use the model plan developed by the CIWMB.
- Requires each State agency and each large State facility (individual California State University campuses, community colleges, prisons) to divert 25 percent of its waste by 2002 and 50 percent by 2004.
- Requires each State agency to appoint a recycling coordinator.
- Requires State agencies to provide adequate areas for recycling in State-owned and leased buildings.
- Requires State agencies to report annually on program implementation and diversion rates.

“Agency” includes every State office, department, board, commission, or other agency of the State.

In addition to the requirements of AB 75, the following policies and statutes address State agency recycling:

- Executive Order W-7-91 requires California State agencies to buy recycled products and set up recycling programs for recyclable materials, where feasible, and requires the CIWMB to assist in these efforts.
- Public Contract Code (PCC) sections 12164.5–12167.1 require the CIWMB to implement and maintain a recycling plan for the Legislature and all State-owned and leased buildings and provide for the recycling of office paper, corrugated cardboard, newsprint, beverage containers, waste oil, and any other

recyclable material generated in sufficient quantity.

- PCC section 12165 (d) prohibits establishment of a recycling program by any State office, agency, or its employees without CIWMB approval.
- PCC section 12167.1 requires State agencies and institutions to report quantities of materials collected for recycling to the CIWMB.
- PRC sections 42560–42562 require the CIWMB to initiate a high-grade white office paper recovery assistance program for California State offices by providing training materials and recycling containers, identifying markets for collected materials, and negotiating contracts with local secondary material brokers.

California State Administration Manual Chapter 1990 informs employees at State facilities of CIWMB policies and procedures regarding the prevention of solid waste generation. It also describes the reuse or recycling of solid waste as an alternative, along with related State agency and individual State facility responsibilities.

The CIWMB is responsible for overseeing AB 75 implementation and assisting State agencies in the development of their programs (see State Agency Recycling Program on page 3).

### ***Federal Agencies***

On October 20, 1993, President Bill Clinton signed Executive Order 12873, “Federal Acquisition, Recycling and Waste Prevention.” On September 14, 1998, President Clinton signed Executive Order 13101, which strengthened the implementation and enforcement of recycling requirements.

Although the executive orders primarily addressed the purchase of recycled products, the orders also established policies for the development of recycling programs. Order 13101 includes the following provisions:

- Requires each agency to include recycling provisions in the acquisition of all leased space and in the construction of new federal buildings.

- Requires each agency to initiate a recycling program that is compatible with State and local recycling requirements.
- Allows executive agencies to retain a share of proceeds from the sale of recycled materials.
- Requires each agency to establish goals for both waste prevention and recycling and to report on progress in its annual report.

“Agency” includes all executive agencies as defined in U.S. Code Title 5, Part 1, Chapter 1, section 105, including the Department of Defense.

The Office of the Federal Environmental Executive (OFEE) is responsible for overseeing the implementation of recycling and procurement programs at federal agencies.

### **Assisting Governmental Agencies**

A variety of programs are available to assist governmental agencies in reducing waste and purchasing recycled products.

#### ***State Agency Recycling Program***

The CIWMB State Organization Facility Assistance (SOFA) section administers a comprehensive program that implements waste prevention, reuse, and recycling programs at State-owned and leased buildings and facilities. These include offices, prisons, youth authority facilities, developmental centers, hospitals, maintenance facilities, and parks.

The mission of the SOFA is to coordinate comprehensive recycling and other waste reduction programs at State facilities by:

- Managing State recycling contracts.
- Training and advising State employees and recycling coordinators.
- Acting as a liaison between State facilities and recyclers.
- Providing recycling information, supplies, and equipment.
- Gathering and reporting data on materials collected for recycling.

As part of its efforts, the SOFA section administers the Project Recycle program. Through Project Recycle, the State develops contracts for the collection of recyclable materials for certain

geographic areas. These contracts are signed on behalf of all State agencies. View a list of current contracts at [www.ciwmb.ca.gov/StageAgency/Recycling/Contracts/](http://www.ciwmb.ca.gov/StageAgency/Recycling/Contracts/).

#### ***WasteWi\$e Program***

WasteWise is a free voluntary program of the U.S. Environmental Protection Agency (U.S. EPA) through which organizations eliminate costly municipal solid waste. This saves them money, and it helps the environment. The program includes the following:

- **Helpline.** A toll-free helpline is staffed by WasteWi\$e information specialists who can answer both general program questions and specific technical questions on solid waste reduction.
- **Assistance.** WasteWi\$e representatives help partners establish their goals, assist them in completing their annual reporting forms, and provide technical assistance.
- **Public awareness.** U.S. EPA draws attention to the WasteWi\$e program and individual partner accomplishments through a variety of activities.
- **Awards program.** U.S. EPA recognizes outstanding achievements of its partners and presents “Partner of the Year” awards within several categories, including business, government, and educational sectors.
- **Program forums.** In addition to the national forum, U.S. EPA sponsors regional forums to recognize the waste reduction efforts of existing partners and to welcome new partners.
- **Case studies.** U.S. EPA recognizes the efforts of individual WasteWi\$e partners by featuring their waste reduction successes in the form of case studies.

#### ***Federal Facilities Compliance Program***

Located in the cross-media division, this program of U.S. EPA-Region 9 ensures that federal agencies and their facilities take actions necessary to prevent, control, and abate environmental pollution.

The program’s approach to federal facilities emphasizes outreach and training, compliance

assistance and enforcement, and strengthened partnerships, such as the following:

- Conferences, workshops, and training programs designed to assist federal facilities.
- Compliance assistance through environmental management reviews and pollution prevention assessments.
- Partnership activities to identify and recognize environmental excellence within federal facilities.

### ***National Office Paper Recycling Project***

The National Office Paper Recycling Project is a nonprofit partnership of public and private sector organizations. Its goal is to maximize office paper recycling and to minimize waste.

Managed under the auspices of the U.S. Conference of Mayors, this unique public/private partnership has set a goal, endorsed by the President, to recycle 65 percent of all office paper. Currently, about 47 percent of office paper is being recycled. Since offices purchase most of the nation's paper, the increase from 47 percent to 65 percent would make a significant contribution toward improving the environment.

The project's primary emphasis is the Recycling At Work campaign. This campaign is designed to not only increase office paper recycling rates, but to encompass all forms of office recycling. The project includes Clean Your Files Day and the Recycling At Work awards program.

### **Program Characteristics**

#### ***Developing a Waste Reduction Plan***

Like any recycling program, government programs require a great deal of planning and coordination.

**Make Sure Program Is Sustainable.** A sustainable program will:

- Be comprehensive in scope to improve the organization's overall environmental performance. A waste reduction program involves much more than placing recycling bins in common areas. A comprehensive program incorporates waste prevention, reuse, recycling, and recycled-content product procurement into everyday business.

- Focus on improvement to internal processes. A waste reduction program should focus not on the waste but on processes that generate the waste. Improving processes within agencies that provide services or receive support from other State agencies or employees will provide maximum savings and reduced waste for the State.

The CIWMB examined its process used to disseminate monthly Board meeting agendas and agenda items to both staff and external clients. The CIWMB implemented a fully automated system that provides better information dissemination and access, requires less staff time, and reduces costs. Following are some of the system's features:

- Average monthly paper savings of 35,000 sheets of paper.
- Average of \$832 per month savings of CIWMB mailing costs.
- More than \$4,500 savings to CIWMB clients requesting agenda items electronically.
- Secure upper management support and solicit employee input. Successful waste reduction requires commitment and support from both the upper management and staff level employees. The staff members responsible for performing the business functions are best able to identify wasteful practices and recommend areas for improvement.

Management must see that the benefits of waste reduction outweigh the costs. Managers must understand that this is not a problem to be fixed, it is an ongoing improvement to internal processes. With upper management support, the improvements can be implemented and the waste reduction savings can be realized.

**Establish Clear Objectives.** When developing a program, it is important to have a clear understanding of the agency's policies and goals from the outset. The ultimate goal is to make waste reduction part of the culture of the workplace.

- Know your waste types. Two methods to identify waste are waste assessment and analysis of business functions:

- Waste assessment. A waste assessment or audit identifies materials and items that are major contributors to an organization's waste stream. A waste assessment also provides a baseline for measuring the effects of waste reduction practices. Waste assessments can range from visual inspections of garbage cans to more formal retrieval, separation, and weighing of disposed materials. For health and safety concerns in an office environment, visual assessments are recommended.
- Analysis of business functions. Examining major business processes for opportunities to reduce materials, labor, or time will produce greater overall cost savings and reduce waste at the same time.

A key example is a change the Fair Political Practices Commission (FPPC) instituted for completion of their Form 700, Statement of Economic Interest. Formerly, hard copies (at 31 pages each) were provided to each State employee. However, most completions required only a signature on the front page, leaving the other 30 pages unused.

The FPPC now provides the form electronically, allowing employees to print only the pages of the form they need. The FPPC realizes savings in several areas: reductions in paper, postage, storage, and labor costs required to manage the volume of paper previously used, as well as the reduction in paper waste.

- Set waste reduction policies and goals. Waste reduction policies reflect the visions and priorities of the department. Policies should be drafted early in the process of implementing a waste reduction program and then formally adopted by the agency. Formal adoption demonstrates support and commitment. Once adopted, standard operating procedures, new employee orientations, and other training programs should include the waste reduction policies.

Waste reduction goals should be adopted as part of the policies of the agency. They can be part of the policies themselves, included as part of budget targets, and/or adopted as a

separate document. The goals should be set for a specified time period, such as one or two years. Setting realistic and measurable goals will ensure success.

### **Follow Key Steps to Develop a Program.**

Following are key steps to establishing a waste reduction program for State offices:

- Designate a waste reduction team and coordinator. A waste reduction coordinator should be appointed by management to ensure that the policies and goals of the agency are met. A waste reduction team of staff (generally from every floor, different location, office, branch, and division) should be designated to assist the coordinator in implementing and maintaining the program.
- Develop an action plan. The waste reduction team should draft an action plan to achieve each established goal. The plan should outline tasks to be accomplished, staff responsible for each task, and a timeline for completion of each task.
- Measure savings. This task provides information to help sustain current efforts and improve upon them. Measuring also provides a system to identify and correct unexpected problems quickly.
- Educate/publicize results. Once the savings are measured, they can be used to educate staff and management of the goals achieved and the success of the campaign. Highlighting savings keeps employees and management involved and enthusiastic about the changes that have been made. Education should be viewed as an ongoing effort, to emphasize the importance of waste reduction and to encourage a conservation ethic.

### **Make Waste Prevention and Reuse a Priority.**

Waste prevention and reuse, sometimes referred to as source reduction, is preventing or reducing the amount of waste produced in the first place. Preventing waste means using less material, such as paper, to do the same job. Reusing materials also is a form of waste prevention because materials go further, thereby producing less total waste.

Waste prevention and reuse measures should be the first steps in a comprehensive waste reduction

program. Successful waste prevention requires creative and analytical thinking. Waste reduction coordinators should first analyze how a reduction in materials can be accomplished. Further analysis is then done to explore how to reuse materials that have been used only once. Too often recycling systems alone are considered, rather than systems that incorporate reduction and reuse.

Successful waste prevention requires making changes to materials that come in as raw materials, supplies, or packaging, rather than thinking about waste reduction as only trash going out. All materials that are recycled or disposed have been paid for in some way. Consider revising purchasing practices to see if fewer materials can be used to accomplish the same task. Minimizing the amount of raw materials, supplies, or packaging used produces direct savings.

The CIWMB has undertaken a comprehensive waste prevention initiative in its headquarters. The CIWMB formed an in-house committee to develop and implement a waste prevention program to reduce waste at the CIWMB and serve as a model for other public- and private-sector office settings. After the first nine months of the program, white office paper use was reduced 25 percent under the following practices:

- Discouraging avoidable or excess copying and printing.
- Encouraging communications via electronic mail.
- Encouraging two-sided copying and printing.
- Making two-sided printing an automatic computer feature.
- Reducing the size of documents.
- Streamlining document review processes.
- Turning one-sided paper into scratch pads.
- Pruning mailing lists.

These efforts will result in annual savings of the following items:

- 364 cases (3,640 reams or 1.8 million sheets) of white paper.
- \$16,724 in reduced postage costs.
- \$68,370 in reduced photocopying costs.

- \$5,500 in reduced printing costs.
- \$10,151 in reduced purchasing costs (paper and note pads).

**Use Materials Exchanges.** A number of materials exchange programs are available to collect and distribute reusable products and property.

The Department of General Service's surplus property program (SPP) receives, stores, and reissues salvaged and surplus property from State agencies. The program initially makes this property available to other State agencies, political subdivisions, and assistance organizations for a minimal service and handling fee. If one of these organizations does not take the property, SPP invites the general public to purchase it on a cash-and-carry first-come-first-served basis.

The SSP also receives surplus materials and salvaged items that federal programs and agencies donate and reissues them to qualified organizations. Organizations that may receive this property are State and local public agencies and nonprofit institutions. Unfortunately, materials from the federal program are not available to the general public.

The SSP maintains a list of all property available at its facilities at any one time. The goal of the program is to make its entire inventory available online so the public has an opportunity to preview merchandise ahead of time. Customers can purchase a wide variety of goods ranging from office furniture, computers, cleaning supplies, bicycles, playing cards, and bulletproof vests (available only to law enforcement agencies) for a fraction of their original costs.

The California Department of Transportation (Caltrans) realized significant savings when it obtained office furnishings another agency sent to the SPP. The agency no longer needed the furniture because it had moved into a building that came with furniture. CalTrans took the unneeded property and saved \$1.5 million.

The California Materials Exchange (CalMAX), operated by the CIWMB, also provides an opportunity to reuse products and materials. CalMax is a free service designed to help find uses for materials that have been traditionally discarded. CalMax recognizes that materials

discarded by one agency may be a resource for another.

CalMax publishes a quarterly catalog and maintains a Web site, [www.ciwmb.ca.gov/Calmax/](http://www.ciwmb.ca.gov/Calmax/). Both of these list available or wanted materials throughout the State of California. Listings are provided at no cost, and exchanges are handled directly between interested parties. Some of the items listed may be low- or no-cost, but the receiving party must provide transportation.

**Consider Deconstructing Old Buildings.** A strategy for waste prevention growing in popularity at government facilities involves deconstruction of old buildings. Salvageable materials may include the following: lumber, all fixtures (doors, plumbing, and windows), ferrous and nonferrous metals, concrete, and scrap wood for mulching. Here are some examples of deconstruction of government facilities around the state:

- Building REsources Materials Re-use, a nonprofit organization, worked on a demolition project with Beyond Waste (see below) at the closed Presidio Army compound in San Francisco. Out of the two buildings they deconstructed, they were able to salvage roughly 85 percent of the first building and approximately 40 percent of the second building. Most sales took place at the deconstruction site, avoiding the significant cost of transportation.
- Beyond Waste is working with Youth Employment Partnership, Inc., to train 12 young people to properly deconstruct buildings at the Port of Oakland, a former naval supply center. The warehouse they are currently deconstructing has more than 400,000 board feet of lumber, including old-growth Douglas fir and redwood. Beyond Waste hosts an open house at the port and is soliciting local architects and contractors to buy the materials available.
- Building Material Distributors, a nonprofit organization located in San Diego, specializes in recovering materials that can be shipped south into Mexico. Building Material Distributors is in negotiations for demolition and deconstruction work at the Naval Training Center.

- Lewis Homes, a Kaufman and Broad company, will be demolishing obsolete military housing units at the former Mather Air Force Base in Sacramento and then building new homes. The company will use demolition concrete as subbase in its development project.

Proper training of the crews is important in the deconstruction business. The more conscientious and trained the crews, the greater the amount of valuable materials can be salvaged from a job. Materials include old-growth lumber no longer available on the “new” market.

### ***Select Materials and Collection Methods***

After exhausting waste prevention and reuse options, government facilities should maximize recycling opportunities for the remaining materials. Before determining what materials to collect for recycling, the agency should first determine what materials are generated in sufficient quantities to support a recycling program. The materials to collect for recycling and the methods used to collect those materials are specific to the organization and site.

The methods used to collect, separate, store, and remove recyclables depends on the material types, volume, space availability, and services available to remove the materials. General recycling program options include:

**Source Separation.** Materials such as white paper, mixed paper, aluminum, glass, plastic, and cardboard are segregated by type into bins where they are initially discarded. This is the traditional approach to office recycling. Characteristics of a source-separated recycling program are:

- High value for recyclables recovered.
- Provides an adequate recovery rate to contribute to State waste diversion goals.
- Provides significant avoided disposal costs for building management.
- Requires only 5 percent more custodial staff time to handle discarded materials.
- Success (high recovery rate) based on employee education and involvement.

**Dry Commingled (Unseparated).** All dry waste materials are mixed where initially discarded, then

compacted and hauled away for a fee (usually less than the charge for trash). The materials are mechanically/manually sorted at a transfer station or materials recovery facility (MRF).

Unacceptable materials typically include cafeteria and restroom waste, food/beverages, liquids, pallets, construction debris, and landscape waste. Characteristics of a dry commingled system are:

- Reduced recovery value of recyclables.
- Provides a high recovery rate to contribute to State waste diversion goals.
- Avoided disposal costs for building management depends on fee to haul away dry commingled recyclables.
- Requires minimal additional custodial staff time to handle discarded materials.
- Requires less employee education and involvement to achieve a high recovery rate.

**Include An Education Element.** Education is important to the success of any waste reduction program, and recycling collection is no different. The program should include training for staff on the collection system operations and on how staff participation determines the success of the program.

This training should cover materials being diverted and the proper location to put the recyclables, and it should clearly identify lists of unacceptable materials. Education increases participation in the program and minimizes contamination of recyclables, thereby increasing the volume of recyclables and the overall success of the program. Education needs to be done on an ongoing basis, particularly when new staff is hired or individuals move office spaces due to reorganizations.

**Waste-Efficient Landscaping.** Landscape sites at government facilities can be maintained in an environmentally sound and cost-effective manner. Responsible landscape management practices include reducing green waste generation, reusing trimmings and prunings on site, and recycling organic products (mulch and compost) back into the landscape. Best management practices for landscaping include:

- Controlled irrigation—water just enough to maintain plant health and appearance.

- Precise fertilization—only apply precise amounts of necessary plant nutrients.
- Grasscycling—the natural practice of leaving clippings on the lawn when mowing.
- Selective pruning—techniques that result in less green waste and healthier plants.
- On-site composting and mulching—use trimmings on-site as mulch and compost.
- Proper organic materials application—use products derived from urban green waste.
- Environmentally beneficial design—install low-maintenance drought-tolerant plants and waste-efficient landscape design features to reduce trimmings and prunings.

Practices that reduce green waste generation produce significant economic and environmental benefits. Direct savings can be realized by reduced maintenance, labor, water, and fertilizer cost. Indirect cost benefits include reduced hauling expenses and disposal fees. Another benefit is less exposure to workers' compensation claims due to fewer crew injuries from lifting heavy loads.

On-site management of yard trimmings returns valuable high-quality nutrients and organic matter to the soil. This encourages healthier disease- and pest-resistant plants that improve appearance, prevent erosion, and increase pride in the property.

Using recycled organic materials in landscapes enhances soil fertility and water-holding capacity and slows evaporation losses. These practices increase plant drought tolerance, conserve water, and suppress the spread of wildfires. Using the environmentally beneficial landscape maintenance practices outlined above will reduce fertilizer and water usage, which in turn reduces toxic runoff that can lead to surface and groundwater pollution.

Fountain Circle, on the west side of California's State Capitol, was selected as a demonstration ground for grasscycling. This was a cooperative effort among the CIWMB, Department of General Services (DGS), the Office of Buildings and Grounds (OBG), and the Toro Company, which supplied the mulching mower. This initial demonstration was so well received that OBG is now converting its entire fleet to grasscycling mowers. Results of the demonstration included:

- Mowing time reduced by more than 50 percent.
- Bagging and disposal cost eliminated.
- More than 300 pounds of grass clippings per 1,000 square feet recycled annually.
- Nitrogen content of recycled clippings reduced fertilizer needs by 25 percent.

### ***Developing a Buy Recycled Program***

Buying recycled-content products (RCP) completes the recycling loop by creating markets for recycled materials to be used as feedstock in the manufacturing of recycled-content products. It is the demand side of the recycling equation.

Governmental agencies play two critical roles in RCP procurement:

- Governmental purchases (including local, State and federal agencies) can help develop markets for recycled materials. State government is the single largest purchasing entity in California.
- Government entities can serve as an example for the private sector. If the private sector believes that the State is committed to buying RCPs, it too will respond by manufacturing more RCPs and increasing its own RCP purchases.

### ***State Agency Buy Recycled Campaign***

The State Agency Buy Recycled Campaign (SABRC) is a joint effort between DGS and the CIWMB to implement State law requiring State agencies and the Legislature to purchase products with recycled content.

The State's procurement requirements are the result of Chapter 1094, Statutes of 1989 (AB 4, Eastin), Chapter 960, Statutes of 1993 (AB 11, Eastin), and Chapter 816, Statutes of 1999 (SB 827, Sher). The current laws require State agencies to perform the following tasks:

- Purchase RCPs in sufficient quantities to attain annual targets for specified product categories.
- Report annual purchases of RCPs and nonrecycled products in specified product categories.

- Submit plans identifying how the annual goals for RCPs will be attained.
- Require contractors to certify, under penalty of perjury, the recycled content of the products they offer to the State.
- Purchase all RCPs instead of nonrecycled products whenever they are available at no more than the total cost of nonrecycled products, and where fitness and quality are comparable.
- Attain mandated RCP procurement goals regardless of the price differences between recycled- and nonrecycled-content products.

The SABRC offers a variety of helpful ways to buy recycled products, including the SABRC manual that includes frequently asked questions, all required forms, and definitions of terms. The manual is available online or as a downloadable file (see Web sites on page 16).

Although some of the SABRC requirements have been in statute for 10 years, the results indicate that the State has fallen far short. In FY 1997–98 the State purchased \$24.5 million in recycled content products, but it should have purchased \$600 million to be in compliance with the mandated goals.

**Elements Of a Successful Campaign.** Several elements are required to ensure a successful buy recycled campaign in any agency. Depending on the size of the agency, the way it is organized, the extent to which purchasing is centralized, and the commitment made to waste diversion mandates, each agency's results can vary considerably. The access to computers and software dedicated to purchasing and accounting—and the individual staff working on these issues—will affect the amount of RCP purchases and the ability of that agency to accurately report those purchases.

The following items have been identified as key elements of a successful buy recycled campaign:

- Commitment from the top. Because of the need for multiple offices to be involved in identifying, purchasing, tracking, and reporting RCPs for an agency, a high-level manager must often oversee these activities. An important factor in a successful campaign is support throughout the levels of management.

- **Dedicated personnel.** Those responsible for the campaign mandates must purchase RCPs rather than non-RCPs whenever possible. Without personal dedication by the agency coordinator, increased RCP procurement will be very difficult.
- **Internal communication/coordination.** For most agencies, meeting procurement goals will require a coordinated effort among multiple branches or offices within an agency. The individual responsible for generating the report may not work in the procurement office. At the very least, a close relationship must exist between the buyers, the users, and those generating the report.
- **External information sharing.** Some people have had bad experiences with RCPs in the past or have heard of such experiences from others. RCPs have improved a great deal in recent years. The new generation of RCPs compares very favorably to non-RCPs with respect to price, quality, and availability. Some products are simply better than nonrecycled-content products.
- **Evaluation and improvement.** Analyze past purchases with respect to product performance, price, delivery, and vendor satisfaction. This will result in the best RCP purchasing practices, and it will prevent some mistakes. The results will provide feedback for the RCP suppliers on how to improve the RCPs that were not purchased.

### ***Building Green***

A “green” or sustainable building is a structure that is designed, built, renovated, operated, or reused in an ecological and resource-efficient manner. Green buildings are designed to meet certain objectives, such as protecting occupant health; improving employee productivity; using energy, water, and other resources more efficiently; and reducing environmental impacts associated with the production of raw materials and building construction.

Green buildings include sufficient space for recycling collection containers and trucks. Green building design incorporates construction materials that minimize waste, uses RCPs

wherever possible, and reuses and recycles construction and demolition debris.

Green buildings provide significant savings in energy and operating costs over the life of the building. Cost savings are fully realized when they are incorporated at the conceptual design phase through construction, with the assistance of an integrated team of professionals.

When planning and constructing new State buildings, the State could realize significant operating cost savings while providing environmental leadership. The CIWMB is actively working to incorporate sustainable building measures into several developing State building projects to demonstrate the performance and economic success of sustainable construction in the state.

### **Case Study: Defense Procurement**

In response to the President’s Executive Orders 12873 and 13101, the Joint Logistics Commanders asked the Defense Logistics Agency in February 1998 to add a new element to the Federal Logistics Information System (FLIS). Environmental attribute codes (ENAC) highlight products with positive environmental attributes or identify items as being green (environmentally preferable).



The presence of an ENAC indicates that a product meets the environmental standards and criteria of a government-approved certifying agency, or in some cases, that a product may be preferred or approved as an environmental alternative product.

The Defense Logistics Information Service is updating the logistics information system with these ENACs to help customers find environmental products in the logistics system.



Environmental products are also identified by a “green tree” symbol in the Department of Defense electronic mall and also in the Federal Logistic Data (FED LOG) publication, available in CD-rom or DVD format.

DLIS Environmental is also working in partnership with the Government, Industry, Reference Data, Edit and Review program (GIRDER). When operational, this Web-based

application will make it easy for vendors who have products listed in FLIS to update key product information. Vendors will also have the opportunity to self-certify that their products meet one or more of the listed environmental criteria.

By promoting environmentally preferable products in FLIS, the projected savings from the increased purchase and use of recycled and environmentally preferred products will exceed \$87.78 million per year. A significant portion of these savings will come from the reduction in hazardous waste disposal costs.

### **Case Study: Los Alamos National Laboratory Mail Recycling Program**

Los Alamos National Laboratory (LANL) annually receives approximately 600 tons of junk mail. The LANL mailroom staff has implemented an ongoing program to collect and recycle more than 35 percent of this unwanted material at virtually no cost by integrating its retrieval into the existing on-site mail delivery system.

LANL operates under a contract for the University of California and is required to recycle greater than 35 percent of the total waste generated each year.

The staff from the Bus-4 mail room worked with the environmental stewardship office to develop a program that simultaneously reduces the amount of waste going to the landfill and helps to meet the 35 percent recycling rate.

A mail stop called MS A1000 was created to receive the unwanted mail from the 10,000 employees at the laboratory. Employees can now label junk mail with "MS A1000" and it will be sent back to the mail room for sorting and recycling.

Employees who deliver the mail throughout the laboratory complex every day agreed to pick up MS A1000 material with the outgoing mail.

In the mail room this material is sorted into various bins for different recycling options:

- Mixed paper is picked up by Los Alamos County and recycled into roof felt.
- Transparencies are sent out to be recycled by a plastics manufacturer.

- Glue-bound books and magazines have the binding sheared off so that the paper can be recycled.
- Other materials are either collected for recycling or reused.

The program recycles approximately 200 metric tons of material annually, saving \$25,824 in disposal costs that would have been paid to the county landfill. The program saves an additional \$116,000 in waste disposal fees.

With the success of this program, the mail room staff has been able to expand the program from collecting junk mail to accepting books, transparencies, newsprint, magazines, flyers, brochures, catalogs, binders, colored paper, and folders. Books collected through MS A1000 are recycled or donated to schools or other government agencies for reuse. This system has been very effective and could be easily implemented at other government sites as a part of a mail program.

### **Case Study: Corcoran Prison Recycling**

The Corcoran State Prison has implemented an aggressive recycling program. In just six months, the prison has gone from 0 to 50 percent waste reduction as of November 1999. The prison expects its trash bill to drop significantly in March 2000.

The prison now has a total of 70 2-cubic-yard recycling bins. The number of 2-cubic-yard trash bins has been reduced from 67 to 53. The prison plans to continue to reduce trash to 40 bins or less and achieve 70 percent reduction by 2001. The local Marine Corps in Fresno accepted about 4 tons of fiber to use as rags.

The prison, which would like to start its own composting facility, added collection bins in the cafeteria for food waste and compostables starting in December 1999. The success of the Corcoran recycling program is the result of strong cooperation between the prison and the Kings County Waste and Recycling Authority, along with the involvement of the CIWMB State agency recycling program. A full-time recycling crew of 10 people has implemented the program at the prison.

## Case Study: Deconstruction at the Presidio

The Presidio Trust, a federal executive agency governed by a seven-member board, exists to maintain and enhance the natural and cultural resources of the Presidio park in San Francisco. The Presidio, part of the Golden Gate National Recreation Area and the national park system, seeks to become financially self-sufficient by the year 2013.

The Presidio strives to be a model of environmental, economic, and cultural sustainability. The trust decided that waste diversion would be a key element of its strategy. Waste reduction strategies include:

- Parkwide recycling collection and education.
- Visitor and special event recycling.
- Building materials salvage.
- Compost and tree debris recycling.
- Environmental purchasing program.

A pilot project conducted at the Presidio was the deconstruction of Building 901, a warehouse built by the U.S. Army in the 1940s. Partners in the project included the National Park Service, the San Francisco Community Recyclers, Beyond Waste, and the Wood Resources Efficiency Network.

In about six weeks, more than 60,000 board-feet of lumber were recovered in structural form. Rather than being chipped for boiler fuel or ground for mulch, the wood was reused in value-added projects. The unique qualities of the old-growth wood made it especially valuable. Wood experts admired its close grain, straightness, and absence of flaws.

Although the project incurred high labor costs (more than 1,000 person-hours), the project was successful due to the revenue from sales of recovered lumber.

Some important lessons from this project were:

- Have a reuse and recycling specialist examine the building and determine the potential value and salvageability of materials.
- Reuse as much material as possible on the site or elsewhere within your organization.

- Plan for a project that will take more time than demolition.
- Identify markets for materials before you begin the project.
- Designate a secure space for materials to be stored and prepared for marketing.
- Consider alternative labor sources and the potential to offer skills training.
- Track the destination of the materials and tell your story.

### Deconstruction Costs For the Presidio Project

Expenses	
Labor	\$33,053.22
Logistics	\$11,982.74
Administration	\$10,303.78
<b>Total Expenses</b>	<b>\$55,339.74</b>
Income	
Demolition give-back	\$16,800
NPS supplement	\$15,000
Sale of lumber	\$30,155
<b>Total Income</b>	<b>\$61,955</b>
Value of unsold lumber	\$13,500

## Case Study: Lawrence Berkeley Laboratory/Ecology Center Project

In May 1999, the Ecology Center of Berkeley and the Lawrence Berkeley National Laboratory (LBNL) started a waste diversion project with grant funding.

LBNL already had an established and innovative recycling program with an existing recycling rate of 58 percent. The Ecology Center planned to increase LBNL's diversion by 270 tons or 20 percent over the 1,366 tons diverted in the base year.

As part of the project, the Ecology Center placed a staff person at the facility with the task of identifying and ranking the priorities for diversion. The project included a variety of tasks, including:

- Group training sessions.

- One-on-one interactions with LBNL research and administrative staff.
- Training the custodial staff.
- Implementing needed changes in bin placement and service frequency.
- Distribution of educational literature.
- Troubleshooting the reusables distribution system.
- Monitoring the composition of all waste and recycling receptacles.
- Establishing a working relationship with LBNL's hauler.
- Ensuring that LBNL is complying with Department of Energy regulations.
- Working with construction contractors to insure that they recycle.
- Analyzing the data history of LBNL's recycling weights.

When the project was initiated, staff expected that C&D debris would comprise the majority of the new diversion. However, construction has decreased since the project was first proposed. Consequently, the on-site recycler focused more on office and lab paper recycling. The recycler also investigated carpet recycling and expanding organic composting to include tissues and food waste.

Thus far, the project has diverted 206 tons, achieving 76 percent of the goal of 270 tons while expending 67 percent of the allocated staff time. Fiber and green/wood categories have yielded the majority of the new diversion.

Despite having to shift focus towards lighter materials, staff members report that they are meeting project objectives. During the final months of the project, staff will concentrate on the following areas:

- Increasing mixed paper collection with new bins received from an Alameda County Recycling Board mini-grant.
- Office clean-outs.
- Deconstruction of some small buildings.
- Outside construction contractor compliance and reporting.

- Increasing diversion of green and wood waste.

Other recommendations and ideas for future diversion include:

- Standardizing outside C&D contractor diversion reports.
- Creating contractual percentage or account numbers for work related to handling and inspecting of diversion.
- Holding training/staff meetings on diversion and location of bins for contractor workers.
- Create handout on prices/contact numbers for contractors to order their own rolloffs.
- Use green specs more in bids; research why more RCPs are not being used.
- Involve inspection team and/or environmental health and safety staff more in non-hazardous waste monitoring.
- Work with haulers to develop better use of yellow salvage hoppers and loading instructions/labeling of bins.
- Create incentives for custodians to recycle.
- Create incentives for office employees and students in labs to recycle.
- Track waste and diversion by building using real weight values—possibly with an on-truck scale and coded bins.
- Create small version of poster as handout for new employees.
- Research use of washable air filters for large building to replace disposables.
- Reduce paper towel use by switching to cloth hand towel rolls, or avoid landfilling them by composting.
- Standardize LBNL supply companies that take back plastic pipette boxes and other packaging or reuse.
- Use different cafeteria take-out container that is recyclable or returnable for washing.
- Compost food waste in cafeteria with paper.
- Use more washables in cafeteria.
- Use different cap on coffee cups to cause fewer problems with composting.

- Offer refillable coffee cups and other cups that people bring back.
- Buy small hang-on bins or other small bins for trash or recycling of bottles/cans or other materials.
- Revamp process for calculating holiday garbage.
- Revamp process for calling in bins and getting receipts signed by truck driver.
- Get compactor/baler for plastic sheeting, other plastics, or trash.
- Develop method for getting U.S. EPA credit in procurement for services or source reduction/reuse activities, such as using cloth towels.
- Buy more recycled-content products made with postconsumer waste instead of pre-consumer items—research new products and define recycled content better.
- Issue notes (garbage police tickets) to increase useability for custodians and waste diversion staff.
- Centralize places for trash dumpsters and recycling for better control of illegal dumping.
- Develop graphic link to lab recycling guide on Web site or post in other visible place.
- Obtain better lids for garbage dumpsters to avoid water weight, and research water factor used by hauler in reports.
- Create mini-recycling centers on each floor with a recycling poster above the bins.
- Work more with gardeners on yard waste diversion.

### **Local Government Challenges and Opportunities**

Local governments need to put the messages of recycling and buying recycled products into practice, so residents and businesses will see they are committed to upholding high standards of sustainability. Many communities in California have adopted strong policies and are implementing programs to achieve their waste diversion goals.

As with many businesses, communities find that they can actually save money by more careful

review and development of the recycling and trash disposal system for their own facilities. Local governments may also obtain significant amounts of waste diversion through requirements placed on contractors doing work for the community (for example, road and highway repairs and construction).

Local governments are also now in a unique position to increase partnerships with State agencies. AB 75 mandated specific waste diversion requirements for all State agencies. Communities should now be contacting all State agencies and facilities within their jurisdiction to identify the individuals who have been given responsibility for overseeing AB 75 for those agencies. (For contact information, see Web sites on page 16.)

Once the community makes contact with the agencies, they should request copies of all reports filed with agency headquarters (if outside the community) or with the CIWMB. The data in the State agency reports can be included in a local community's annual report to the CIWMB.

Caltrans projects and major State prisons offer particularly good opportunities for waste diversion. With the help of the CIWMB State agency recycling program staff, communities could follow the example of Corcoran State Prison and obtain higher waste diversion rates.

Federal facilities in California have been working for many years to implement waste reduction, recycling, and recycled product procurement programs. Communities could contact any federal facilities in their area and ask them for information on their programs that local governments could include in their annual reports to the CIWMB. In addition, communities could offer federal and State facilities technical and financial assistance in meeting waste diversion goals.

Communities can offer valuable training and education for local, State, and federal government agencies. If performed with outreach to businesses in the community, significant waste diversion is possible.

### **Tips for Replication**

- Identify State agencies and facilities in your community and local contacts from the CIWMB State agency recycling program.

Request copies of those State agency plans for recycling under AB 75.

- Send letters to all State agencies and facilities (and follow up with phone calls) to offer community assistance in meeting requirements of AB 75.
- Using the “blue pages” of telephone directories as a starting point, identify all federal agencies and facilities in the community.
- Send letters to all federal agencies and facilities offering the community’s assistance in implementing federal executive orders.
- Pool your resources with other communities, regional solid waste authorities, and county government recycling coordinators to organize outreach and training programs.

## References

### *CIWMB Publications*

Many CIWMB publications are available on the Board’s Web site at:

[www.ciwmb.ca.gov/Publications/](http://www.ciwmb.ca.gov/Publications/).

To order hard copy publications, call 1-800-CA-Waste (California only) or (916) 341-6306, or write:

California Integrated Waste Management Board  
Public Affairs Office,  
Publications Clearinghouse (MS-6)  
1001 I Street  
P.O. Box 4025 (mailing address)  
Sacramento, CA 95812-4025

Publication #310-02-012, “Solid Waste Assessments: A Model for Local Government Recycling and Waste Reduction”

Publication #500-94-035, “Encouraging Top Management to Support Waste Reduction Efforts”

Publication #500-94-004, “Reduce, Reuse, Recycle—A Guide for California Business”

Publication #442-95-070, “Establishing a Waste Reduction Program at Work”

Publication #441-97-023, “Measuring the Success of Office Paper Reduction Efforts”

### *Other Publications*

U.S. EPA, WasteWise tip sheets: “How to Start or Expand a Recycling Collection Program,”  
[www.epa.gov/wastewise/pubs.htm#fs](http://www.epa.gov/wastewise/pubs.htm#fs)

### *State/Federal Policies*

State agency recycling and procurement:  
[www.ciwmb.ca.gov/StateAgency/](http://www.ciwmb.ca.gov/StateAgency/)

[www.ciwmb.ca.gov/BuyRecycled/StateAgency/Statutes.htm](http://www.ciwmb.ca.gov/BuyRecycled/StateAgency/Statutes.htm)

Federal Executive Order 13101, “Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition”  
[www.ofee.gov/](http://www.ofee.gov/)

## Contacts

### *CIWMB Contacts*

Office of Local Assistance, CIWMB, (916) 341-6199

State Organization Facility Assistance (SOFA) section, (916) 341-6275

State Agency Buy Recycled Campaign (SABRC) (916) 341-6470; [www.ciwmb.ca.gov/BuyRecycled/](http://www.ciwmb.ca.gov/BuyRecycled/)

### *Other Contacts*

WasteWise Program (5306W)

U.S. EPA  
401 M Street, SW  
Washington, D.C. 20460  
Toll-free helpline: 1-800-EPA-WISE  
Send questions/comments to: Jeff Tumarkin, fax (703) 308-8686, [Tumarkin.Jeff@epamail.epa.gov](mailto:Tumarkin.Jeff@epamail.epa.gov)

Federal Facilities Compliance Program (CMD-2)

U.S. EPA  
75 Hawthorne Street  
San Francisco, CA 94105-3901  
Sara J. Segal—Federal Facilities Coordinator, (415) 744-1569  
Larry Woods—Federal Facilities Team, (415) 744-1580

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P.O. Box 29052

San Francisco, CA 94129-0052  
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Rick Best, Californians Against Waste Foundation, Sacramento, Calif. (916) 443-5422, [rgbest@cawrecycles.org](mailto:rgbest@cawrecycles.org)

### **Program Web Sites**

CIWMB, State Agency Recycling:  
[www.ciwmb.ca.gov/StateAgency/](http://www.ciwmb.ca.gov/StateAgency/)

CIWMB, State Organization and Agency Recycling Database:  
[www.ciwmb.ca.gov/StateAgency/SOARD/](http://www.ciwmb.ca.gov/StateAgency/SOARD/)

CIWMB, State Agency Buy Recycled Campaign:  
[www.ciwmb.ca.gov/BuyRecycled/StateAgency/](http://www.ciwmb.ca.gov/BuyRecycled/StateAgency/)

CIWMB, Business Resource Efficiency and Waste Reduction Program:  
[www.ciwmb.ca.gov/BizWaste/](http://www.ciwmb.ca.gov/BizWaste/)

DGS Surplus Property Program:  
[www.pd.dgs.ca.gov/](http://www.pd.dgs.ca.gov/)

Office of Federal Environmental Executive:  
[www.ofee.gov/](http://www.ofee.gov/)

U.S. EPA: [www.epa.gov/](http://www.epa.gov/)

U.S. EPA WasteWi\$e program:  
[www.epa.gov/wastewise/](http://www.epa.gov/wastewise/)

U.S. EPA Region 9 Solid Waste:  
[www.epa.gov/region09/waste/solid/](http://www.epa.gov/region09/waste/solid/)

Defense Logistics Information System:  
[www.dlis.dla.mil/](http://www.dlis.dla.mil/)

DOD, GIRDER program: [www.gidm.dlis.dla.mil/](http://www.gidm.dlis.dla.mil/)

### **Credits and Disclaimer**

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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](http://www.consumerenergycenter.org/flex/index.html)**