California Integrated Waste Management Board

1993 Annual Report

California Integrated Waste Management Board

Annual Report 1993

STATE OF CALIFORNIA

PETE WILSON
Governor

JAMES M. STROCK
Secretary for Environmental Protection
California Environmental Protection Agency

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

JESSE R. HUFF
CHAIRMAN

WESLEY CHESBRO
VICE CHAIRMAN

SAM A. EGIGIAN

EDWARD G. HEIDIG

KATHY NEAL

PAUL RELIS

■

RALPH E. CHANDLER
EXECUTIVE DIRECTOR

Publication #600-94-001
Printed On Recycled Paper

STATE OF CALIFORNIA

Pete Wilson, Governor

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD
8800 Cal Center Drive
Sacramento, California 95826

March 31, 1994

To the Senate and the Assembly of the California Legislature:

On behalf of the California Integrated Waste Management Board, I am pleased to present our 1993 Annual Report which documents the progress being made to reduce California's waste stream, increase recycling opportunities and develop new markets for materials previously buried in landfills.

Specifically, we have seen the following major achievements:

- A 5 million ton decrease in the amount of waste disposed of annually in landfills since 1990.
- A steep rise in the development of new markets for recycled products, resulting in a multi-million dollar boost to California's economy.
- A 10 percent reduction in state solid waste disposal fees and a $5.2 million rebate to ratepayers.
- A dramatic streamlining of the permitting process.

As you read this report and evaluate our progress, keep in mind that these efforts reflect not only the commitment of the California Integrated Waste Management Board and its dedicated staff, but also the efforts of local government, the business community, the waste management industry, the environmental community, and other concerned citizens.

With the passage of the Integrated Waste Management Act in 1989, the Governor and Legislature demanded strong leadership, full public access to policymaking on solid waste management issues, and a greater integration of solid waste policies. This Board is meeting these challenges, and is confident that California can continue to lead the nation in the war on waste.

Very truly yours,

JESSE R. HUFF
Chairman

1993 Annual Report Contents

EXECUTIVE SUMMARY i

INTRODUCTION AND OVERVIEW 1

I. WASTE PREVENTION (SOURCE REDUCTION) 13

Statewide Waste Prevention Education and Outreach Campaign 13

Outreach Materials for the General Public 15

Waste Prevention Clearinghouse (Information Exchange) 15

CALMAX (California Materials Exchange) 16

Case Studies/Demonstration Projects 17

School Model Programs

Yard Waste Prevention 19

Rigid Plastic Packaging Containers Program 19

Waste Reduction Awards Program 20

Primary Research 21

Unit Pricing System Guidebook 21

II. MARKETS FOR RECYCLABLE MATERIALS 23

Public/Private "Buy Recycled" Procurement 25

Lead-Acid Batteries 26

Retreaded Tires 26

Compost 28

Minimum Recycled-Content 29

Newsprint 29

Trash Bags 30

Rigid Plastic Packaging Containers Program 30

Market Research and Analysis 31

Market Status Reports and Action Plans 31

Waste Paper Market Development Strategy 31

Mixed Paper and Minimum-Content Product Reports 32

Recycling Market Development Zones 33

Recycling Equipment Tax Credit Program 35

Research and Development Program 36

Santa Barbara County Compost Market Project 36

Rubberized Asphalt Concrete Projects 36

III. Waste Stream Diversion 37
Local IWM Planning 37
CIWMP Review 37
Local Assistance 40
Waste Stream and Diversion Tracking 41
Plan Conformance Findings 41
Diversion Programs 41
Outreach Materials 41
CALMAX (California Materials Exchange) 42
Project Recycle 42
School Model Programs 45
Nonyard Wood Waste 45
Compost 46
Used Oil 46
Metallic Discards 49
Sewage Sludge 50
Research and Development Program 50
Anaerobic Digestion Research Program 50

IV. Public Perceptions and Practices 51
Educating the Public 51
Public Education Priorities 52
Public Education Tools for Local Governments 53
Educating School Children 54
Hotline 55
Used Oil Public Education Campaign 56
Household Hazardous Waste Education 57

V. Partnerships with Local Governments and Industry 59
Information Partnerships 59
Local Government Technical Advisory Committee 59
Local Assistance 59
Plastics Recycling Information Clearinghouse 59
Landfill Capacity Study 60
Regionalization Study 61
Household Hazardous Waste Program 61
Model Recycling Space Allocation Ordinance 62
Information Exchange 63
Waste Reduction Awards Program 63
Infocycling 63
Funding Assistance for Local Programs 63
Household Hazardous Waste Grants 63
Tire Recycling Program 65
Used Oil Funding Assistance 67
Used Oil Collection Demonstration Grant Program 67
Used Oil Recycling Program's Grants and Loans 67
Regulations 68
Resource Conservation and Recovery Act 69
Solid Waste Disposal Regulatory Reform Act 70
Composting Regulations 71
IWM Planning 71
Waste Generation 72
LEA Certification and Performance Evaluation 73
Enforcement Advisory Council 75

VI. Regulation and Solid Waste Facilities Management 77

Enforcement Agencies 77

Permitting Solid Waste Facilities 77

Permitting Waste Tire Facilities 81

Board Review of Environmental Documents 81

Inspections of Solid Waste Facilities 82

Closure/Postclosure Maintenance Plans 82

Operating Liability 83

Closed, Illegal, and Abandoned Sites 83

Research and Development 84

Landfill Gas 85

Alternative Landfill Cover 86

Compost, Co-Compost, and Chemically-Fixed Sewage Sludge 87

Rice Straw 88

Metals Recovery Residue 88

Tire Pile Fire Control Standards and Training 89

Appendices

A. List of Acronyms A-1

B. Glossary of Terms B-1

C. List of Certified Local Enforcement Agencies C-1

D. Publications List D-1

E. Tire Recycling Program Annual Report E-1

F. Legislative Bill Index F-1

Executive Summary

The Legacy of Waste

Californians generate about 45 million tons of solid waste annually. That's more than one ton of trash every second of every day, and enough to bury a four-lane freeway under six feet of refuse, stretching from Oregon to the Mexican border.

All of this affords a dubious legacy to each Californian. A person who lives to be 70 years old would leave behind 105 tons of waste for future generations. As California's population grows, so does the strain on our waste infrastructure. It has become imperative for us to be less wasteful so that we may conserve precious natural resources, landfill space, and the quality of life we seek for ourselves and our children.

The California Response: A New Waste Management Philosophy

In 1989 and 1990, legislation creating the California Integrated Waste Management (IWM) Act ushered in a new era of waste management. The new law emphasizes conservation of natural resources through a hierarchy of management methods to reduce, reuse and recycle solid waste.

Ambitious waste diversion goals are set: 25 percent by 1995 and 50 percent by the year 2000. To handle materials that cannot be diverted, the planning process requires local communities to identify future landfill capacity to ensure environmentally safe disposal.

To provide effective management of the state's solid waste stream–and leadership to our historic diversion efforts–the full-time California Integrated Waste Management Board was established. Board Members represent both the Executive and Legislative branches of State government, a cooperative partnership to develop and direct a proactive waste management infrastructure.

The Board is vested with policy and regulatory authority to ensure reduction in waste generation and compliance with environmental regulations. The forums for the Board's decision-making process are public hearings, which provide access for all interested parties.

The new Board was welcome relief to those who wanted a more courageous role from State government in the war on waste.

...the new board...would be required to encourage planning that reduces, recycles and reuses garbage to the maximum extent possible...the Sher approach makes the most sense because it seeks to bring some regulatory order to the garbage mess.

Editorial
Sacramento Bee
May 11, 1989

1993: A Year of Progress

Responding to the challenges facing California's economy and environment, the Board adopted a strategic plan in 1993 for achieving its goals in a manner that protects the public health and environment, minimizes waste generation and fosters development of industries that use recyclable materials. The depth and breadth of the strategic plan is reflected in the significant achievements that occurred in 1993:

The Board sponsored legislation which consolidated several solid waste surcharges, reduced the total fee paid by solid waste facilities to the state by 10 percent, and provided a onetime rebate to fee-payers totaling $5.2 million.

Recognizing that recycling cannot succeed without sustainable markets, the Board fashioned a multifaceted Market Development Plan to spur investment in our manufacturing economy and stimulate demand for secondary materials. The Board's zone loan program has pumped millions into California's economy, making it a productive partner in the drive to make environmental technology a job creator in the Golden State.

Fully aware that public perceptions and practices play a critical role in waste prevention and diversion, the Board elevated its media and research efforts, successfully conveying the message of reduce, reuse and recycle to the public with its "Leave Less Behind for the Future" campaign.

Knowing that burdensome, overlapping regulatory schemes were stifling California's economic comeback, the Board played a leadership role in streamlining the permitting process and eliminating overlap among regulatory agencies.

"You are to be commended for excellence in making your staff available to local government. Those who say government regulators are remote and out-of-touch with the regulated would be pleasantly surprised to see that at least one branch (Local Assistance) of one regulator (CIWMB) has made the effort to get out and on the streets, see and hear first hand, what is going on with those who are regulated."

John Brand
Solid Waste
Coordinator
City of Barstow

A Reality: 25 by 95

Before passage of the IWM Act, most of us thought of our waste as the exclusive property of the local landfill. Only a few thought about the economic benefits of using waste materials in manufacturing and the environmental benefits of sending less waste to landfills. Today, that narrow perspective has magnified by leaps and bounds, thanks to the resolute commitment of citizens, businesses, state and local governments.

Recent figures indicate that approximately 34 million tons of waste are being disposed in California landfills annually, compared to nearly 45 million tons of waste generated. This is the result of increased public awareness and local diversion programs taking shape. Statewide, we are closing in on — and are confident that we will achieve — the historic goal of 25 percent diversion by 1995.

At a time of declining faith in government's ability to get things done right and on time, this achievement underscores the concerted effort envisioned by the Governor and State Legislature, and conducted by the Board, local governments, small business and other team players.

The team concept is especially important between the Board and local governments; in the absence of a sound working relationship, local diversion efforts would suffer dramatically. The Board has forged a strong partnership with cities and counties, and in doing so has ensured progress while earning praise.

Diverting waste from landfills is especially critical when one considers that siting a new landfill, or expanding an existing one, remains a lengthy, often burdensome process. The cleanup in the wake of disasters such as the Northridge Earthquake requires a huge waste disposal effort, and underscores the urgent need to preserve landfill space — a need that is partly met through successful waste prevention and diversion.

Market Development: Creating Jobs and Helping the Environment

In 1993, the Board strengthened its role as an ally in the state's campaign to revive the economy. Guided by a strategy for economic growth and job creation, the Board placed a premium on stimulating the production of new goods and services from waste materials. As more communities implement recycling programs, there is a critical need to create and expand markets for recycled materials.

The Board is helping to recharge California's economy through its Recycling Market Development Zones, located throughout the state. This program is the first of its kind in the U.S. and has attracted interest throughout the country. Located in these zones, businesses can receive low interest loans and tax incentives to build and expand recycling-related enterprises. This program can be essential to success, for in today's struggling economy, the quest for capital is often a futile one.

With 17 of its recycling market development zones in place, and more than 20 additional zones expected by 1996, the Board offers hope to a beleaguered business sector.

More than 1,000 new California jobs have been created through the Board's market development activities. By the end of 1993, the Board had approved $7.7 million in zone loan funds to be pumped into California's economy, a figure that will grow by at least $5 million each year. And the amount of recyclable materials handled by participating businesses is approaching one million tons a year.

Not satisfied with just a successful market development zone program, the Board in 1993 fashioned a far-reaching, comprehensive plan to further expand markets for recycled materials. The report, "Meeting the Challenge: A Market Development Plan for California," identifies ways to stimulate markets, provides a blueprint for a strong recycling industry in California, and outlines 16 priority actions.

"Immediately after the designation as an R.M.D. zone we were inundated with inquiries. Most of these inquiries were from small businesses who were looking for some sort of start-up situation, looking at the opportunities associated with the loan program... the amount of the inquiries was really over-whelming to us."

Mike Jenkins
Coordinator
San Diego Recycling Market Development Zone Program
Speaking before the CIWMB
July 28, 1993

"Certain state agencies... they're kind of like phantoms. You call and either they're not in or nobody ever heard of them or it's a wrong number. That's not true with the [Integrated Waste Management Board.] I can call down there and get a hold of who I want and get some answers... we have good communication."

Charles Bird, Butte County Local Enforcement Agency
Speaking before the CIWMB
January 28, 1993

Permit Reform

One of the greatest threats to California's business climate is the state's burdensome, convoluted permit process. Indeed, our state's regulatory morass has been cited by business as good reason for locating elsewhere.

In 1993, the Board was part of the solution. Responding to the call to eliminate overlap among regulatory agencies, the Board undertook a joint study with the State Water Resources Control Board to clarify their respective roles. The final report recommended a number of ways to eliminate overlap and duplication of statutory authority. Those recommendations were contained in Board-sponsored legislation, AB 1220 (Eastin), that was passed by the Legislature and signed into law by Governor Wilson.

The result is an improved enforcement structure, with clear distinction of regulatory authority and responsibilities.

The bill also consolidated three solid waste surcharges into a single fee, issued a onetime rebate to fee-payers totaling $5.2 million, and set the new combined fee at a rate that is 10 percent lower than the 1992 level.

In another example of its commitment to streamlining the permit process, the Board spearheaded the effort to obtain State primacy in administering the new Federal landfill management program, known as Subtitle D. Without approval from the federal government, California's regulated community would have been forced to comply with two sets of nearly identical landfill permit requirements.

An efficient permit process, however, is more than streamlining and delegation. It is maintaining a strong working relationship with our colleagues in the field. The Board has teamed up with Local Enforcement Agencies to clarify requirements and enable local waste management officials to conduct their duties with expedience and consistency — attributes valued by the regulated community.

Working With California Businesses

Recognizing that we cannot afford to impair the economy at the expense of improving the environment, the Board performed its duties mindful of its impact on business.

This approach has met with considerable success. Over the past year, support for the Board's actions has come from both the business sector and the environmental community.

". . . at every step in the regulation-adoption process the Waste Board was extremely sensitive to the potential burdens these requirements might place on complying businesses . . . the resulting regulations adequately balance those concerns with the Waste Board's responsibility to ensure that businesses comply with state law."

Eric Whalen, Legislative Advocate
Californians Against Waste
(Recycled-content trash bag regulations)

"We at Trans Western Polymers, Inc. found the (post consumer material) hearings and the workshops to be very open, fair and well-managed...We further believe that the (post consumer material) regulations are well written, concise, clear and easy to understand for people that work within our industry."

Joon B. Bai, President/CEO
Trans Western Polymers, Inc.

"...Thank you for your help in getting the information we needed so promptly. I just wish everyone did business the way you do."

Robert A. Ireland
Central European Marketing Group
San Francisco, California

Getting Californians to "Leave Less Behind for the Future"

To enlist support in our waste prevention and reduction effort, the Board launched a major public education campaign persuading Californians to "Leave Less Behind for the Future."

The first step of this project, completed in 1993, was a pilot communications campaign in two test markets, Bakersfield and Sacramento. The results of the pilot program demonstrated strong public support of recycling and an upward movement in behavior change. Perhaps even more important, respondents indicated that marketing communications programs such as the Board's will be requisite to greater public involvement in waste prevention and reduction activities.

As a first-stage component of the campaign, the Board assisted all local governments in California by providing them with media kits containing material ready-made for print, radio and television markets.

In other efforts, the Board held teacher workshops around the state to assemble information for hazardous and nonhazardous waste curricula, and produced two award-winning documents: the *Compendium for Integrated Waste Management* and the *Home Composting and Grasscycling Manual.*

Used Oil Recycling Program

The Integrated Waste Management Board also administers the incentive fee program for used oil recycling, created by the Oil Recycling Enhancement Act of 1991. The need for this program is underscored by the fact that up to 55 million gallons of used oil are inappropriately or illegally disposed of in California each year.

The Board is moving forward with a public education effort for its Used Oil Recycling Program to inform people of the hazardous effects of improper oil disposal and make citizens aware of the rebates available to them for recycling their used oil.

"As a taxpayer and educator in our state of California, I commend your department for the excellent job it is doing...[the] Waste Management curricula was professionally organized and executed."

Harriet Donaldson
Fourth Grade Teacher
Taft City School District

Fiscal Stewards

Doing its part during times of fiscal crisis, the Board has kept 20 percent of its job positions vacant. Despite this, the Board has been able to maintain peak response to local governments, industry and the general public.

The Continuing Commitment

For the California Integrated Waste Management Board, 1993 was a year of great achievement — for California's environment *and* economy. We're moving closer to the goals established by landmark legislation, as we employ aggressive and innovative ways to reduce, reuse and recycle, and spur economic growth in the process. The progress we have made underscores a concerted effort among state and local governments, business and industry, and the public, and offers great promise for 1994.

Introduction and Overview

THE CALIFORNIA WASTE STREAM

Approximately 39 percent of the state's waste is from residential sources, and 61 percent from commercial and industrial sources. (See Figure 1, page 11, for the estimated average 1990 waste stream composition.) The distribution of the California waste stream closely parallels that of the state's population. Nearly one-half of California's 32 million residents reside in Los Angeles, Orange, and San Diego counties; more than half of the solid waste generated statewide comes from this three-county area.

The size of California's waste stream will continue to grow as the population increases. With a projected state population of almost 36 million residents by the year 2000, California's waste could reach approximately 54 million tons at the 1990 rate of generation. Contrasting with this growth in population is decreasing landfill capacity at a time when more than 34 million tons of waste are being disposed in landfills. The remaining permitted landfill disposal capacity statewide was estimated at 13 to 18 years in January 1990. At that time, counties representing approximately 70 percent of the state's population indicated they would be facing a landfill capacity shortage within the next 13 years if 1990 conditions persist. Ten counties containing nearly 40 percent of the state's population estimated they have less than five years remaining in landfill disposal capacity.

MISSION OF THE BOARD

The mission of the Board is to protect public health and safety and the environment through waste prevention, waste diversion, and safe waste processing and disposal. The Board accomplishes this mission by:

- Educating the public about the value of resource conservation and the economic and environmental costs of waste disposal;
- Facilitating the development of markets for recyclable materials and the treatment of solid waste as a resource;
- Aggressively enforcing environmental regulations;
- Developing effective relationships with local governments and private industry to develop and implement IWM programs;
- Conducting focused research in support of the waste management hierarchy;
- Developing cost-effective, economically feasible, and environmentally safe approaches to waste management; and
- Facilitating the development of facilities required to divert waste from disposal and provide disposal capacity for materials that cannot feasibly be diverted.

ISSUES AND MANDATES

The IWM Act and related laws have placed many important issues before the Board, with many mandates to be implemented. The following are among the leading examples of these issues and mandates.

- A statewide hierarchy was established for IWM, with priorities of (1) source reduction, (2) recycling and composting, and (3) environmentally-safe transformation and land disposal.
- Each city and county is required to divert 25 percent of its solid waste from landfills through source reduction, recycling, and composting by January 1995. Fifty-percent diversion is required by the year 2000 (transformation may account for up to 10 percent of the mandated 50 percent).
- Each city and county must develop a plan and implement programs to meet these goals, with the oversight and assistance of the Board. The Countywide Integrated Waste

Management Plans (CIWMP) include specified elements from each city and county regarding plans for source reduction and recycling, household hazardous waste, nondisposal facilities, and siting of solid waste facilities; they are submitted for Board review and approval.

- Local enforcement agencies (LEA) monitoring solid waste handling and disposal facilities must meet certification criteria developed by the Board. To strengthen protection of public health and the environment, the Board must review and revise statewide standards for solid waste handling and disposal, and evaluate LEA performance every 18 months.
- The Board must develop statewide public information and education programs to gain public support for, and increased participation in, the priorities and goals of IWM.

BOARD ORGANIZATION

To facilitate the open discussion of the IWM issues, assist in implementing the mandates, and provide a forum for careful examination of information from all points of view, the Board has established six three-member committees pursuant to Public Resources Code (PRC) Section 40500. These committees provide a framework to allow full review of issues and proposals prior to a hearing by the full Board; this facilitates the consideration of noncontroversial items, as well as providing an opportunity for discussion of issues requiring careful review. The committees are listed below.

1. ***The Administration Committee*** oversees the Board's management responsibilities and issues related to its operational requirements.
2. ***The Local Assistance and Planning Committee*** oversees local implementation of IWM priorities and goals.
3. ***The Legislation and Public Affairs Committee*** oversees legislative proposals and issues affecting Board activities and development of public information and education programs to implement and promote IWM goals.
4. ***The Market Development Committee*** oversees the Board's aggressive market development mandates, providing for the development and expansion of markets for recycled materials.
5. ***The Permitting and Enforcement Committee*** oversees procedures for issuing and enforcing solid waste facilities permits, enforcement of State minimum standards, development of new standards and regulations, and the pursuit of local government and private sector compliance with State standards for solid waste facilities.
6. ***The Policy, Research and Technical Assistance Committee*** oversees development and implementation of the Board's short- and long-term research needs, including the expansion of existing and development of new technology for handling and processing solid wastes, such as special wastes.

The Board's staff is organized to reflect the Board's strategic plan priorities, and the relationships between many of the Board's programs and the constituents served by those programs. Staff is organized into five divisions as described below.

1. ***The Governmental and Regulatory Affairs Division*** oversees and assists local governments in the development and implementation of local plans to meet the coordinated planning features of the IWM Act. The division oversees and coordinates the development and processing of IWM regulations by Board staff, responding to public queries through a customer service referral system, and educating private and public entities on specific regulations. The division analyzes all legislation related to IWM activities, pursuing positions and amendments as directed by the Board, and develops legislative proposals. The division has four branches: Office of Local Assistance; Plan Implementation Branch; Regulations Branch; and Legislation Branch.
2. ***The Markets, Research and Technology Division*** oversees the Board's market development program: assessing secondary materials markets; providing technical assistance in the collection and use of secondary materials; promoting procurement

of recycled-content products by state, local governments, and private industry; assisting in the development of public/private partnerships for the production of recycled-content products; encouraging the use of secondary materials in manufacturing through the Board's Recycling Market Development Zones Program; and by awarding grants to facilitate secondary material collection and manufacturing. Market development initiatives implemented by the division are key to the success of waste diversion. The division has three branches: Grants and Research Branch; Market Development Branch; and Zone Assistance Branch.

3. ***The Waste Prevention and Education Division*** implements programs designed to increase public participation in all aspects of waste reduction, including waste prevention, reuse, recycling, and composting, as well as the safe disposal of used oil and household hazardous waste. The division educates, motivates, and provides technical assistance, where appropriate, to the residential, commercial, and manufacturing sectors, and to state and local governments and institutions, either directly and/or through local governments. The division administers the Board's Used Oil Recycling Program, a major program to encourage the collection and recycling of used oil. The division has three branches: Education and Outreach Branch; Used Oil and Household Hazardous Waste Branch; and Waste Prevention and Diversion Branch.

4. ***The Permitting and Enforcement Division*** reviews and recommends operating permits, not only for specific solid waste facilities, but for solid waste handling, processing, and disposal technologies, as well. The division reviews permitted solid waste facilities for compliance with State standards and operational/closure conditions. The division evaluates and certifies LEAs to administer provisions of the permitting, inspection, and enforcement programs and works closely with LEAs to ensure environmentally-safe disposal and handling of solid wastes. The Board reviews and recommends closure and postclosure maintenance plans for active solid waste landfills for compliance with statutory and regulatory requirements. For permitted, unpermitted or inactive sites, the division evaluates the need for remediation for compliance with statutory and regulatory requirements. The division has five branches: Local Enforcement Agency/ Enforcement Agency Branch; Enforcement Branch; Permits Branch; Closure and Remediation Branch; and Solid Waste Facilities Management Branch.

5. ***The Administration and Finance Division*** handles the Board's administrative functions, providing financial, accounting, personnel, data processing, and equipment and maintenance functions. The division has four branches: Financial Assistance Branch; Administrative Services Branch; Information Management Branch; and Economic Forecasting Branch.

The Board/Executive support functions are handled by two offices reporting to the Executive Director.

The Legal Office provides Board and staff support on legal history, actions, analysis, and advice. The office directly handles all litigation and other legal actions entered into by the Board.

The Planning and Analysis Office is responsible for the development of long-term program emphasis under the direction of the Board. The office develops proposed Board policy on intra-Board issues, as well as interagency environmental issues.

Please see inside back cover for the Board's Office and Division Contact List.

BOARD PRIORITY ISSUES

Beyond the organizational initiatives outlined above, the Board has made significant progress in developing and implementing programs to address the Board's priority issues, as well as legislatively mandated priorities and programs. Listed below are the Board's priority issues, along with key programs and accomplishments to address the issues.

I. WASTE PREVENTION (SOURCE REDUCTION)

Waste prevention is at the top of California's IWM hierarchy. It encourages the efficient use of materials and minimizes the high costs of extracting raw materials and managing solid waste. When waste is not created, it does not need to be collected, processed, recycled, incinerated or landfilled. This reduces costs and pollution generated from the handling and processing of waste, improving California's ability to protect public health and the natural environment. It also extends the life span of landfills. The goal of waste prevention is not to discourage economic activity or job creation. It is intended to encourage production processes and consumer choices that are efficient and conserve resources.

Although waste prevention offers great potential to reduce waste, it is a relatively underdeveloped approach, especially when compared to traditional waste management practices that rely on managing materials, including recycling. Most state-mandated programs and waste management efforts of local governments have been directed toward recycling because recycling offers a relatively quick and proven approach for diverting significant amounts of waste from landfills. To facilitate waste prevention activities throughout California and direct future activities, the Board has developed a statewide strategy, *The Statewide Waste Prevention Plan* [PRC 40507(f)]. This plan is the culmination of extensive research, including literature and program reviews, surveys, interviews, and two symposia. It serves as a statewide action plan for waste prevention and identifies program barriers and possible state actions.

Accomplishments

- The Board completed, as part of its statewide waste prevention education and outreach campaign, a pilot communications campaign in two test markets. The results of the Board's pilot campaign found that consumer awareness, attitudes, and behavior regarding waste can be positively influenced by marketing communications programs, and without such programs little progress in changing consumer mindsets and habits can be expected.
- Educational information was developed for California businesses, including: *Food for Thought*, a restaurant waste reduction guide in three languages; *Waste Reduction for Business and Industry*, a brochure; and *Don't Throw Your Profits Out With Your Trash*, a fact sheet on successful business waste reduction programs. The information was distributed to businesses, local government staff, trade associations, and chambers of commerce.
- Since the beginning of the Board's California Materials Exchange (CALMAX) program, participants (businesses, schools, industries, and institutions) have reported savings exceeding $855,000. To date, exchanges have resulted in the diversion of more than 152,000 tons of materials from landfills. [Note: these figures do not include the last quarter of 1993.]
- A guide, *$eeing Green Through Waste Prevention*, for school districts and local governments, was developed by the Board. This guide outlines steps for establishing a comprehensive program.
- The Board, in cooperation with the University of California Cooperative Extension, developed an educational pamphlet on grasscycling for local governments, landscapers, and the public, *Sending Your Grass Back to Its Roots: Grasscycling*. A Spanish version of the pamphlet will be completed in early 1994. Camera-ready copies of the brochure were provided to local jurisdictions for reprinting and distribution. The Board also worked to promote grasscycling within the "green" industry; consequently, the California Landscape Contractors Association officially endorsed grasscycling this year.
- The Board created the Waste Reduction Awards Program to provide an opportunity for California businesses to gain public recognition and statewide exposure for outstanding achievement in commercial IWM. The Board received over 200 applications from all sizes and types of businesses. The applications were scored based on established criteria. Approximately 74 percent of the applicants met the criteria and received an award.

II. MARKETS FOR RECYCLABLE MATERIALS

The Board administers an aggressive market development program. Developing markets for recyclable materials is critical if California is to meet its mandated waste diversion goals. It also creates opportunities for reindustrializing California and expanding the existing job force. Although several market development programs exist within the state, there has never been a thorough understanding of California's recycling markets. Such an understanding is necessary to fully evaluate the effectiveness of existing programs and to prioritize resources in future efforts. To provide such a vision, and to ensure that California's market development efforts are at the forefront of national efforts, the Board developed its first market development plan in 1993 [PRC 40507(d)]. The release of the plan, *Meeting the Challenge: A Market Development Plan for California*, in March 1993, marked a significant point in the Board's efforts to expand markets for recycled materials collected in California.

The plan has become the cornerstone of the Board's market development program and has been instrumental in assisting local governments in the design of their own market development programs. It demonstrates that reuse and remanufacture of recyclable materials can result in the creation of a vigorous new industry that would create new manufacturing jobs, as well as jobs in sorting, processing and preparation of materials for market.

Accomplishments

- The Board completed analysis of broad, emerging recycling policies that have long-range implications for market development in California. The results of the Board's efforts were issued in a series of reports, including the *Emerging Market Development Options Summary Report*, which was based on the findings of the following reports: *Manufacturer Responsibility Options to Support IWM*, *Tradable Credit Applications to IWM*, and *Emerging Issues: Global Agreements*.
- To promote the Board's "Buy Recycled" program, the Board has developed a directory of California vendors that provide recycled products. Board staff makes this information available to State agencies and local governments in written and electronic formats. The directory lists manufacturers and distributors of recycled products in California.
- The Board processed certifications from consumers of newsprint received for the 1992 reporting period, accounting for a total of approximately 2.2 million metric tons of newsprint. Consumers reported that 55 percent of the total metric tons used was recycled-content newsprint (newsprint in which a minimum of 40 percent of the fiber is postconsumer waste paper). As a group, 79 percent of California commercial printers and publishers used at least the required minimum recycled-content newsprint in their operations.
- The Board adopted a report on the Rigid Plastic Packaging Containers Program that includes program implementation plans, funding method options for program administration, and recommendations for modifying specific areas of the legislation.
- The first four cycles of the Recycling Market Development Zone loan program occurred in 1993. The Board approved approximately $7.7 million in loans to 19 businesses. The loans will assist these businesses in creating more than 300 jobs, while handling over 800,000 tons of recyclable materials annually.
- A report on the Recycling Equipment Tax Credit Program, required by Revenue and Taxation Code Sections 17052.14(j) and 23612.5(j), was adopted by the Board.
- The Board adopted a voluntary program to increase the use of postconsumer waste paper by the paper industry, setting an initial voluntary utilization for recycling goal of not less than 50 percent for postconsumer waste paper generated in California by the year 2000.
- The Board updated market status reports and action plans for glass and pavement; updated the action plans for ferrous metals and waste paper; and completed a market status report for waste tires.

III. WASTE STREAM DIVERSION

The central component of the California IWM Act is the waste stream diversion goals for 1995 and 2000. By January 1995, each city and county is required to divert 25 percent of its solid waste from landfills through waste prevention, recycling, and composting. Fifty-percent diversion is required by the year 2000. (Transformation may account for up to 10 percent of the mandated 50 percent.) To help realize this goal, each city and county is required, with the oversight and assistance of the Board, to develop a plan and implement programs to meet these goals. CIWMPs, submitted for Board review and approval, include specified elements from each city and county regarding plans for waste prevention and recycling, household hazardous waste management, and siting of solid waste facilities.

In addition to assisting local governments in the development and implementation of their CIWMPs, the Board is assisting local governments in meeting their waste diversion goals through specific programs. These programs include public information and education programs; the California Materials Exchange program; Project Recycle; school model programs; and programs to achieve diversion of specific materials, such as used oil, compost, and sewage sludge.

Accomplishments

- The Board reviewed the preliminary draft CIWMP for Contra Costa County and acted on the final CIWMP. This is the first CIWMP submitted to the Board for consideration. Included in this CIWMP are the Countywide Siting Element and County Summary Plan, and 19 jurisdictions' Source Reduction and Recycling Elements (SRRE), Nondisposal Facility Elements (NDFE), and Household Hazardous Waste Elements (HHWE). The Board approved 55 of 59 elements of the CIWMP, and disapproved four cities' SRREs.
- A policy on the amount of waste material when used as alternative daily cover (ADC) that may be credited for disposal reduction in meeting the 1995 diversion goal of 25 percent was adopted by the Board.
- Board staff distributed 500 media kits to local jurisdictions as public education tools for a yearlong waste prevention campaign, and provided hands-on training on how best to use the kit materials. The kits were designed to assist local jurisdictions in meeting the state's waste reduction mandates.
- To save local jurisdictions time and money in complying with statutory and regulatory requirements, the Board has completed and is in the process of completing several planning models. To guide counties and regional agencies in the preparation of CIWMPs, three models have been developed: a Model NDFE, a Model Countywide/ Regionwide Siting Element, and a Model Summary Plan.
- A new publication, *Infocycling*, was developed by the Board. *Infocycling* is a quarterly memo targeted primarily at city and county employees responsible for planning, funding, implementing, monitoring and evaluating IWM Act programs.
- The amount of recyclable materials collected from State agencies increased from 10,677 tons in 1992, to 15,469 tons in 1993. This represents more than a 45-percent increase. The largest single type of material collected was mixed waste paper at 3,650 tons. The second largest was corrugated cardboard at just under 4,309 tons. Other office paper collected was white ledger at 1,976 tons and colored ledger at 999 tons. Other materials collected included laser toner cartridges (LTC), tires, chipboard, clothing and rags, mattresses, wood, oil filters, eggboxes, license plates, binders, antifreeze, coated sulfite paper, and animal feedbags.
- To promote Project Recycle, the Board developed a video, brochure, poster, fact sheet, and a *Pocket Guide to Recycling*. This material was distributed to State offices and recycling coordinators. The Board also publishes a quarterly *Project Recycle Update* to inform State workers of the State's recycling program.
- As of December 31, 1993, 140 used oil collection centers were certified; 164 industrial generators, 34 curbside programs, and 1 electrical utility were registered. As with any new program, marketing and educational

efforts are likely to result in an increase in the number of participating entities. Staff have developed fact sheets and have conducted workshops and provided training to gain acceptance and promote participation for the new program.

- The Board developed used oil recycling rates based on oil sales figures supplied by oil manufacturers to the Board of Equalization and used oil recycling figures furnished to the Board by certified used oil recycling facilities. During the first year of operation of the Used Oil Recycling Program (October 1, 1992 to September 30, 1993), oil manufacturers sold 229 million gallons of lubricating and industrial oil in California. Used oil recycling facilities recycled 74 million gallons of oil (a recycling rate of 32 percent) from California during the same period; a small amount of California oil is transported out of state for recycling. The adjusted recycling rate, which reflects the amount of oil consumed during use and not available for recycling, is 56 percent.

IV. PUBLIC PERCEPTIONS AND PRACTICES

Waste prevention and diversion practices must become a part of the public's daily habits and routines to achieve a reduction in waste. The Board is investing much of its resources to focus on the long-term gains of practicing waste prevention and the economic and environmental costs associated with waste disposal. Through a series of public education programs, the Board is seeking to change the daily habits and routines of the public and to influence the decision-making processes of businesses and local governments toward the acceptance of waste reduction as a way of life. The public, industry, and local governments are becoming more aware of the environmental consequences of excessive waste generation and the avoidable costs associated with those practices. Research indicates the public is not only receptive to such information but large numbers of people are actually eager to obtain this knowledge. The following are key Board accomplishments in providing waste prevention and diversion education:

Accomplishments

- The Board published the *Compendium for Integrated Waste Management*, in cooperation with the State Department of Toxic Substances Control and the State Department of Education. The compendium is a resource guide for identifying the top curricula in the areas of hazardous and nonhazardous waste. Additionally, the compendium provides direction for future curricula development by clearly defining the parameters of quality waste management educational materials as they relate to California education standards and state-of-the-art IWM concepts.

- A used oil public education campaign is being researched and designed by the Board through a contract with Deen and Black Public Relations. The campaign will encourage the proper disposal of used oil in California.

- The "Buy Recycled" display was exhibited by the Board at numerous events throughout the state to educate the public on how postconsumer waste is transformed into new and useful products. The display provides consumers with information on how and where to purchase recycled products.

- Household hazardous waste (HHW) fact sheets were developed by the Board and are provided in both print form and camera-ready slicks to local governments and the public. The fact sheets include: general information on HHW, aerosols, antifreeze, batteries, latex paint, oil-based paint, and used oil.

- Approximately 175 information releases on Board programs were distributed to various daily newspapers and trade journals throughout the state and nation, as well as to television and radio stations throughout the state.

- A special hotline number (1-800-CA-WASTE) was established by the Board to support its "Smart Shopper" advertising urging the public to call for information on reducing waste and a free Smart Shopper's information kit.

V. PARTNERSHIP WITH LOCAL GOVERNMENTS AND INDUSTRY

The IWM Act statutorily mandates waste diversion goals. The Board works in direct partnership with local governments and industry to gather, analyze, and disseminate information critical to the implementation of the IWM Act. Efforts in this area include: the Local Government Technical Advisory Committee, the Plastics Recycling Information Clearinghouse, Landfill Capacity and Regionalization Studies, the Household Hazardous Waste Program, a Model Recycling Space Allocation Ordinance, the Waste Prevention Clearinghouse, and the Waste Reduction Awards Program.

The Board also utilizes resources in the form of grants to forward the goals of the IWM Act. Funding has been provided in the following areas: household hazardous waste, waste tires, and used oil.

The Board works closely with local governments and industry in the development of new regulations and the revision of existing regulations that are critical to the implementation of IWM Act. Major accomplishments of the Board were its contributions to the development of the Solid Waste Disposal Regulatory Reform (SWDRR) Act, and its pursuit of full approved state status under the United States Environmental Protection Agency (US EPA) to comply with strict federal standards established by Subtitle D of the federal Resource Conservation and Recovery Act (RCRA).

The SWDRR Act streamlines the state process of permitting solid waste landfills, eliminates interagency duplication, reduces landfill operator fees, and strengthens the Board's program for evaluating local enforcement agencies.

In a US EPA approved state, owners and operators have the option to use 21 alternative means of compliance with the Subtitle D federal criteria. This flexibility is essential in working with the state's public and private operators where California's diverse climatic and geologic features warrant it. On October 7, 1993, California received full approved state status by US EPA.

Accomplishments

- The Board initiated development of a conceptual draft implementation work plan for the requirements of the SWDRR Act, including regulation revision, permit streamlining, and administrative changes. The Board also developed a plan, as part of the implementation work plan, for researching the possibility of consolidating financial assurances for operating liability and corrective actions into one mechanism.
- The Board sponsored legislation, AB 1827 by Assemblymember Sher (Chapter 289, Stats. 1993), and adopted emergency regulations in its pursuit to bring the state's solid waste management program into compliance with federal criteria under Subtitle D.
- Tire recycling grants totaling $1.5 million were awarded by the Board to business enterprises and public entities involved in tire recycling activities (up to $50,000 for individual tire-related development and feasibility demonstration projects, and up to $100,000 for individual innovative research and development projects).
- Waste tire management contracts totaling $447,000 were awarded by the Board to local governments for innovative projects (up to $40,000 for market development projects, up to $30,000 for collection and processing demonstration projects, and up to $30,000 for illegal disposal cleanup and public education projects). With $440,187 being contributed by local jurisdictions in the form of required matching dollars or in-kind services, the total value of the program approaches $1 million.
- Household hazardous waste (HHW) grants totaling $4 million were awarded by the Board to local governments for programs implemented in the previous year that help prevent the disposal of HHW at solid waste landfills.
- A 15-minute paint video, designed to increase the marketability of recycled latex paint by dispelling myths about it, was completed by the Board. This video is directed toward procurement officers.
- Used oil recycling workshops were conducted by the Board at nine locations throughout the state for several hundred representatives from the oil industry and local government agencies. These workshops provided an overview of the incentive, certification, and grant features of the Board's Used Oil Recycling Program.

- Used oil block grants totaling more than $6.2 million were awarded by the Board to local governments for the implementation of local used oil collection programs.
- Green material composting regulations were adopted by the Board and became effective in mid-1993.
- Emergency regulations were adopted and filed by the Board with the State Office of Administrative Law for: the preparation of the Nondisposal Facility Elements (Article 6.4); the revision of the procedures for preparing the Source Reduction and Recycling Elements (Article 6.2); and the procedures for approval of the Source Reduction and Recycling Elements, Household Hazardous Waste Elements, and Nondisposal Facility Elements (Article 7.0).
- Local enforcement agency (LEA) evaluation procedures were developed by the Board to assess LEA performance, identify LEA program implementation issues, and provide guidance in resolution of these issues.
- Enforcement assistance grants totaling $1.5 million were awarded by the Board to all qualifying LEA jurisdictions to enhance their landfill permitting and inspection programs.

VI. REGULATIONS AND SOLID WASTE FACILITIES MANAGEMENT

California is facing several significant challenges in managing solid waste, including: diminishing landfill capacity; the need to evaluate viable alternatives for solid waste facilities to meet environmental standards; the permitting of new types of solid waste facilities; and the review of proposed development projects on closed landfill sites that pose unique threats to public health, safety, and the environment.

Local governing bodies are authorized by the Public Resources Code to designate a local agency to carry out solid waste permitting, inspection, and enforcement duties in their jurisdictions. The designated local agency must be certified by the Board as the LEA in order to have enforcement authority. The Board is responsible to ensure that LEAs enforce and solid waste facility operators comply with state standards for the protection of public health, safety, and the environment. During 1993, the Board initiated improvements to streamline the existing regulatory process and provide solid waste facility operators with a predictable, efficient, and reliable regulatory structure.

The Board's responsibilities for regulation and management of solid waste facilities spans the complete facility life cycle, from inception (permitting) through operation (inspection), to closure and postclosure responsibilities. The Board's responsibilities have been expanded to include orphaned, abandoned, and illegal waste disposal sites.

Accomplishments

- The Board concurred in the revision of 25 Solid Waste Facilities Permits (SWFP), modification of 15 SWFPs, and concurred in 27 new SWFPs for the 1993 calendar year.
- Comments on the Tentative Authority to Construct for the proposed Campo Landfill, to be sited on the Campo Indian Reservation in San Diego County, were provided by the Board.
- Waste tire regulations were adopted by the Board for the permitting of major and minor waste tire facilities. The regulations became effective on November 3, 1993.
- Landfill gas monitoring and control regulations were adopted by the Board to conform with the Subtitle D federal rules. These regulations became effective in July 1993, and require operators of municipal solid waste landfills to implement a routine methane gas monitoring program.
- The Solid Waste Disposal and Co-disposal Site Cleanup Program (AB 2136 by Assemblymember Eastin) was initiated by the Board. This program will include a contracting element, a grants element, and a loan element.
- The Site Investigation Process (SIP) for investigation of closed, illegal, and abandoned (CIA) sites was adopted by the Board. The SIP provides standardized procedures to enhance efficient investigation of CIA sites statewide.

- The *Site Investigation Process for Investigating Closed, Illegal, and Abandoned Disposal Sites*, an LEA Advisory publication, was prepared by the Board. The advisory provides guidance for LEAs regarding investigations, prioritization, inspection, and enforcement of CIA sites.
- Board staff are compiling documentation to study landfill gas migratory behavior. This information will be used to develop a guidance document for use by city or county planning departments to help them determine a setback distance on or surrounding closed solid waste facilities and appropriate land uses in the vicinity.

THE 1993 ANNUAL REPORT

The report is organized into the following six chapters: Waste Prevention (Source Reduction), Markets for Recyclable Materials, Waste Stream Diversion, Public Perceptions and Practices, Partnerships with Local Governments and Industry, and Regulation and Solid Waste Facilities Management. Each of these chapters contains a discussion on the Board's implementation of Board initiated and legislatively-mandated programs, including accomplishments.

Estimated Average 1990 Waste Stream Compostion Not Including Diversion Of Excluded Waste Types

Extrapolation by Population of Information in Sampled Preliminary Draft Source Reduction and Recycling Elements Submitted by Jurisdictions

Waste Categories & Types	Tons Disposed	Disposal Rate (%)	Composition Disposal(%)	Tons Diverted	Diversion Rate (%)	Compostion Diversion(%)	Tons Generated
Total	**38,963,796**	**87.5**	**100.0**	**5,549,057**	**12.5**	**100.0**	**44,512,853**
Paper	11,167,887	78.6	28.7	3,042,336	21.4	54.8	14,210,223
Cardboard & Bags	3,297,649	71.4	8.5	1,317,790	28.6	23.7	4,615,439
Mixed Paper	3,328,844	89.8	8.5	377,160	10.2	6.8	3,706,004
Newspaper	1,797,919	66.7	4.6	896,613	33.3	16.2	2,694,532
HI-Grade Ledger Paper	729,786	66.4	1.9	370,006	33.6	6.7	1,099,792
Other Paper	2,013,688	96.1	5.2	80,767	3.9	1.5	2,094,455
PLASTICS	**2,670,634**	**97.1**	**6.9**	**80,051**	**2.9**	**1.4**	**2,750,685**
HDPE Containers	280,061	93.9	0.7	18,313	6.1	0.3	298,374
Pet Containers	71,046	82.2	0.2	15,365	17.8	0.3	86,411
Film Plastics	842,672	97.6	2.2	20,655	2.4	0.4	863,327
Other Plastics	1,476,854	98.3	3.8	25,718	1.7	0.5	1,502,572
GLASS	**1,347,239**	**70.7**	**3.5**	**557,253**	**29.3**	**10.0**	**1,904,492**
Refill Glass Containers	47,110	81.4	0.1	10,800	18.6	0.2	57,910
Redemption Value Glass	411,300	53.3	1.1	359,939	46.7	6.5	771,239
Other Recyclable Glass	565,563	79.4	1.5	146,617	20.6	2.6	712,180
Other Non-Recyclable Glass	323,266	89.0	0.8	39,897	11.0	0.7	363,163
METALS	**2,016,183**	**92.6**	**5.2**	**161,209**	**7.4**	**2.9**	**2,177,392**
Aluminum Cans	104,814	42.0	0.3	144,791	58.0	2.6	249,605
Bi-Metal Containers	48,753	74.8	0.1	16,417	25.2	0.3	65,171
Ferrous & Tin Cans	1,356,463	100.0	3.5	EXCLUDED	0.0	0.0	1,356,463
Non-Ferrous & AL Scrap	198,178	100.0	0.5	EXCLUDED	0.0	0.0	198,178
White Goods	177,504	100.0	0.5	EXCLUDED	0.0	0.0	177,504
Other Metals	130,472	100.0	0.3	EXCLUDED	0.0	0.0	130,472
YARD WASTE	**5,629,202**	**91.5**	**14.4**	**521,828**	**8.5**	**9.4**	**6,151,030**
Yard Waste	5,629,202	91.5	14.4	521,828	8.5	9.4	6,151,030
OTHER ORGANIC	**9,443,392**	**90.5**	**24.2**	**994,985**	**9.5**	**17.9**	**10,438,377**
Food Waste	2,895,702	88.2	7.4	385,715	11.8	7.0	3,281,418
Tires & Rubber	454,170	90.4	1.2	47,968	9.6	0.9	502,138
Wood Wastes	3,400,116	88.2	8.7	454,139	11.8	8.2	3,854,254
Crop Residues	61,418	100.0	0.2	EXCLUDED	0.0	0.0	61,418
Manure	405,886	100.0	1.0	EXCLUDED	0.0	0.0	405,886
Textiles & Leather	947,512	94.0	2.4	60,617	6.0	1.1	1,008,130
Miscellaneous Organic	901,164	97.3	2.3	24,581	2.7	0.4	925,746
Disposable Diapers	377,424	94.5	1.0	21,964	5.5	0.4	399,387
OTHER WASTE	**6,184,270**	**98.6**	**15.9**	**89,324**	**1.4**	**1.6**	**6,273,594**
Inert Solids	3,436,758	100.0	8.8	EXCLUDED	0.0	0.0	3,436,758
Household Hazardous & Containers	224,352	96.6	0.6	7,800	3.4	0.1	232,152
Furniture	20,551	87.9	0.1	2,825	12.1	0.1	23,376
Bulky Items	84,898	96.7	0.2	2,890	3.3	0.1	87,788
Other & Unsorted Waste	2,417,712	97.0	6.2	75,809	3.0	1.4	2,493,520
SPECIAL WASTES	**504,989**	**83.2**	**1.3**	**102,072**	**16.8**	**1.8**	**607,061**
Ash	158,356	74.4	0.4	54,622	25.6	1.0	212,979
Sewage Sludge	41,386	64.7	0.1	22,611	35.3	0.4	63,997
Industrial Sludge	14,634	99.4	0.0	88	0.6	0.0	14,722
Asbestos	4,612	100.0	0.0	0	0.0	0.0	4,612
Auto Shredder Waste	32,557	99.4	0.1	185	0.6	0.0	32,742
Auto Bodies	617	100.0	0.0	EXCLUDED	0.0	0.0	617
Other Special Waste	252,827	91.1	0.6	24,565	8.9	0.4	277,392

Population of sampled jurisdictions	=	29,608,181
Total popultion of state	=	30,049,456
% of population	=	98.5%
Number of sampled jurisdictions	=	498
Total number of jurisdictions in state	=	525
% of jurisdictions	=	94.8%

EXCLUDED WASTE TYPES

Inert solids (concrete, asphalt, dirt, etc.)
Scrap metal (ferrous, non-ferrous, auto bodies, etc.)
Agricultural Wastes (crop residues, manure, etc.)
White goods (major appliances, washers, dryers, etc.)

PER CAPITA RATES

Disposal (lbs/person/day)	=	7.1
Diversion (lbs/person/day)	=	1.0
Generation (lbs/person/day)	=	8.1

Please Note: "#DIV/0!" = ZERO (0). Percentages may not add to 100% due to rounding.

Figure 1

I. Waste Prevention (Source Reduction)

Waste prevention is at the top of California's integrated waste management (IWM) hierarchy. It encourages the efficient use of materials and minimizes the high costs of extracting raw materials and managing solid waste. When waste is not created, it does not need to be collected, processed, recycled, incinerated or landfilled. This reduces costs and pollution generated from the handling and processing of waste, improving California's ability to protect public health and the natural environment. It also extends the life span of landfills. The goal of waste prevention is not to discourage economic activity or job creation. It is intended to encourage production processes and consumer choices that are efficient and conserve resources.

Although waste prevention offers great potential to reduce waste, it is a relatively underdeveloped approach, especially when compared to traditional waste management practices that rely on managing materials, including recycling. Most state-mandated programs and waste management efforts of local governments have been directed toward recycling because recycling offers a relatively quick and proven approach for diverting significant amounts of waste from landfills. To facilitate waste prevention activities throughout California and direct future activities, the Board has developed a statewide strategy, *The Statewide Waste Prevention Plan* [PRC 40507(f)]. This plan is the culmination of extensive research, including literature and program reviews, surveys, interviews, and two symposia. It serves as a statewide action plan for waste prevention, and identifies program barriers and possible state actions. More than 40 activities were identified in the plan that could be implemented. Sixteen were designated as top priorities, including:

- conducting a statewide waste prevention education and outreach campaign;
- developing outreach materials for the general public;
- creating a Waste Prevention Clearinghouse, including a resource center;
- performing case studies/demonstration projects to assist in technology transfer;
- diverting grass clippings/yard trimmings from disposal at landfills (yard waste prevention); and
- conducting primary research, including a methodology for quantifying waste prevention.

(See Figure I-1, page 14, for a complete listing of the 16 designated activities outlined in the *Statewide Waste Prevention Plan*, along with the mission statement and goals.)

To obtain a copy of the *Statewide Waste Prevention Plan*, please see the Publications List, Appendix D, Waste Prevention for further information.

The Board is developing a comprehensive waste prevention program to implement its *Statewide Waste Prevention Plan*, as well as meet its Strategic Plan objectives. The program is directed toward encouraging individuals, state and local governments, and businesses, to not only think about waste prevention but to take action. Within the context of the Strategic Plan, these efforts are highlighted below [PRC 40912(b)].

To maximize efficiency and minimize costs, the Board targeted its efforts. Strategies for prioritizing efforts included identifying large waste generators; types and quantities of waste disposed; opportunities and barriers; and current outreach efforts.

STATEWIDE WASTE PREVENTION EDUCATION AND OUTREACH CAMPAIGN

[PRC 42600 AND 42601]

In 1992, the Board embarked on a statewide public education campaign through a contract with the advertising firm DDB Needham Worldwide.

Mission, Goals & Priorities

(Goals are of equal value)

Mission

Provide leadership that fosters waste prevention and creates a statewide infrastructure to reduce the generation and toxicity of solid waste.

This effort is intended to conserve natural resources and promote a sustainable economy for the State of California.

Goal 1:

Create Awareness and Encourage Individuals to Incorporate Waste Prevention Practices into Daily Activities

a. Develop Outreach Materials for the General Public.

b. Conduct a Statewide Waste Prevention Education & Outreach Campaign.

Goal 2:

Acquire Basic Information About the Effectiveness of Waste Prevention Approaches Needed to Initiate Efforts

a. Conduct Primary Research, Including a Methodology for Quantifying Waste Prevention.

b. Conduct Case Studies/Demonstration Projects.

Goal 3:

Build or Expand Communication Networks Within and Across the Board, Other State Agencies, Local Governments, Educational Institutions, Commercial and Industrial Facilities

a. Establish a Waste Prevention Task Force with Representatives from Target Audiences.

b. Develop a Waste Prevention Clearinghouse Including a Resource Center.

c. Conduct Workshops and/or Training Seminars.

Goal 4:

Assist Local Governments in Achieving Waste Diversion Mandates through Waste Prevention

a. Divert Grass Clippings from Disposal at Landfills.

b. Divert Yard Trimmings from Disposal at Landfills.

c. Set Up Cooperative State & Local Government Purchasing Program.

Goal 5:

Encourage Waste Prevention Within Organizations: State/Local Governments, Institutions, Universities and Schools, and Businesses

a. Create Model Waste Prevention Program at the Board.

b. Educate Top Management about Benefits of Waste Prevention.

c. Give Awards to a Few Outstanding Waste Prevention Programs.

Goal 6:

Develop Incentives and Assistance to Encourage Design, Manufacture, Distribution, Sales and Reuse of Products or Packaging that Decrease the Amount or Toxicity of Waste Generated

a. Provide Cooperative Technical Assistance.

b. Develop Guidelines for Reusing, Upgrading, and Making More Durable Products.

c. Expand Materials Exchange and Reuse Through CALMAX.

Figure I-1

The purpose of the contract was to conduct research on public/consumer awareness of waste prevention and other waste reduction activities, and to develop a creative promotional advertising and public relations campaign to motivate Californians to produce less waste.

In 1993, the Board launched a pilot communications program in two markets — Sacramento and Bakersfield. The campaign included television, radio, outdoor and shopping cart advertising. The advertising in the two test markets promoted waste prevention and urged the public to call 1-800-CA-WASTE to get more information and a free "Smart Shoppers" kit. For more information on the kit and the hotline, see Chapter IV, Public Perceptions and Practices, Hotline.

To gauge the effectiveness of the campaign and the message, the Board conducted a two-wave tracking study. The pre-campaign study was designed to act as a benchmark and provide a snapshot of the current status of consumer behavior. The Board conducted a consumer survey of 300 residents in each of the two markets and surveyed 500 consumers statewide to obtain a baseline from which to compare the impact of the communications program. The post-campaign study was conducted after the advertising had run for the three-and-a-half-month period. The post-campaign survey was to measure changes in consumer awareness at the end of the pilot program, as well as changes in the amount, types and frequency in which consumers take actions to minimize their waste. Post-campaign interviews were also conducted in areas of California that were not part of the pilot program to serve as a "control" market for the research.

Results of the pilot program showed there were significant changes in consumer awareness, attitudes, and behavior in advertised markets, with more change in Bakersfield than in Sacramento. The balance of California, where there was not Board advertising, did not show improvement.

Accomplishments

- The Board completed the pilot communications campaign in two test markets, finding that consumer awareness, attitudes, and behavior regarding waste can be positively influenced by marketing communications programs, and without such programs, little progress in changing consumer mindsets and habits can be expected.

OUTREACH MATERIALS FOR THE GENERAL PUBLIC

[PRC 42600(a)-(f)]

The development and distribution of waste prevention educational materials to a variety of audiences is a significant strategy to raise public awareness and effect behavior change.

A priority for 1994 will be to translate general information materials into other languages, making materials available as camera-ready artwork for local government, trade associations, and nonprofit organizations.

Accomplishments

- The Board developed media kits for distribution to all cities and counties as part of its statewide waste prevention campaign. For background on this and other accomplishments listed here, see Chapter IV, Public Perceptions and Practices, Public Education Tools for Local Government.
- The Board initiated a Back-to-School promotion to advertise the many ways waste can be prevented when sending kids back to school.
- A "No Waste Holiday" promotion was initiated, which advocates simple techniques to reduce the amount of trash generated during the Christmas and Hanukkah seasons.
- Educational Information was developed for California businesses, including: *Food for Thought*, a restaurant waste reduction guide in three languages; *Waste Reduction for Business and Industry*, a brochure; and *Don't Throw Your Profits Out With Your Trash*, a fact sheet on successful business waste reduction programs. The information was distributed to businesses, local government staff, trade associations, and chambers of commerce. To obtain copies, please see the Publications List, Appendix D, Waste Prevention for further information.

WASTE PREVENTION CLEARINGHOUSE

(INFORMATION EXCHANGE)

Preliminary research by the Board indicated that a key barrier to implementing waste prevention programs is a lack of information. To overcome

this barrier, the Board is establishing an information exchange to facilitate the exchange of news, ideas, case studies, reports, videos, and other information among state and local governments, businesses, non-profits, and other interested parties. The information exchange will help program coordinators "jump-start" their efforts by building off the experience of others. The exchange will consist of three key elements that will be phased in: a multimedia resource center; a computerized file search system; and staff to conduct limited research. To provide immediate access to information in the exchange, a computerized bulletin board with access by modem is being considered.

A kickoff for the information exchange is planned for early 1994.

Accomplishments

- Board staff collected waste prevention related materials from several states, countries, local jurisdictions, and the private sector; cataloged materials for the exchange; prepared a promotional brochure; and wrote press releases seeking materials for the exchange. At this time, the exchange covers more than 200 topic areas.

CALMAX (CALIFORNIA MATERIALS EXCHANGE)

[PRC 42600(a)]

The Board is promoting material handling practices that reduce waste generation by businesses and industries through its California Materials Exchange (CALMAX) program. Initiated in 1991, CALMAX is a free, bimonthly classified listings catalog of nonhazardous "waste" materials designed to help business, industry, and institutions find markets for exchanging materials traditionally discarded. CALMAX serves as a communications network for trading inexpensive or free materials, and brings reusers, recyclers, and waste generators together to simultaneously create new markets and reduce waste.

CALMAX has been increasing in popularity since the first catalog (January/February 1992) was distributed. The latest catalog contained 776 listings, compared to 336 in the first edition. At the same time, the number of people requesting to be on the CALMAX mailing list has more than tripled to 7,375. To increase the number and volume of exchanges, Board staff is now calling companies listed in the catalog in an effort to match them with others that can reuse their materials. This shifts CALMAX from a "passive" program (where the parties contact each other directly) to a more "active," staff-assisted materials exchange.

The Board encourages the development of, and networks with, local-level materials exchange programs. Local programs now operating and networked with CALMAX can be found in Sonoma, San Diego, and Humboldt Counties.

To obtain a copy of the latest CALMAX catalog, please see the Publications List, Appendix D, Waste Diversion for further information.

Accomplishments

- CALMAX is now a part of the National Materials Exchange Network, linking by computer the listings of more than 30 other materials exchange programs in North America.
- The Board initiated on-line computer access to CALMAX listings with easy search capability. Direct placement of listings by computer is planned in 1994 to encourage participation by big businesses with multiple materials listings and to reduce paper.
- Since the beginning of the program, participants have reported savings exceeding $855,000. To date, exchanges have resulted in the diversion of more than 152,000 tons of materials from landfills. [Note: these figures do not include the last quarter of 1993.] (See Figure I-2, page 17, for the number of exchanges made and tons diverted in 1993.)
- The Board created a new promotion called KidMAX, matching school supply needs with items and materials donated by firms in the commercial and industrial sectors. Under the new program, schools may place "want ads" in CALMAX and firms can indicate their interest in donating unwanted materials to California schools. Preliminary response

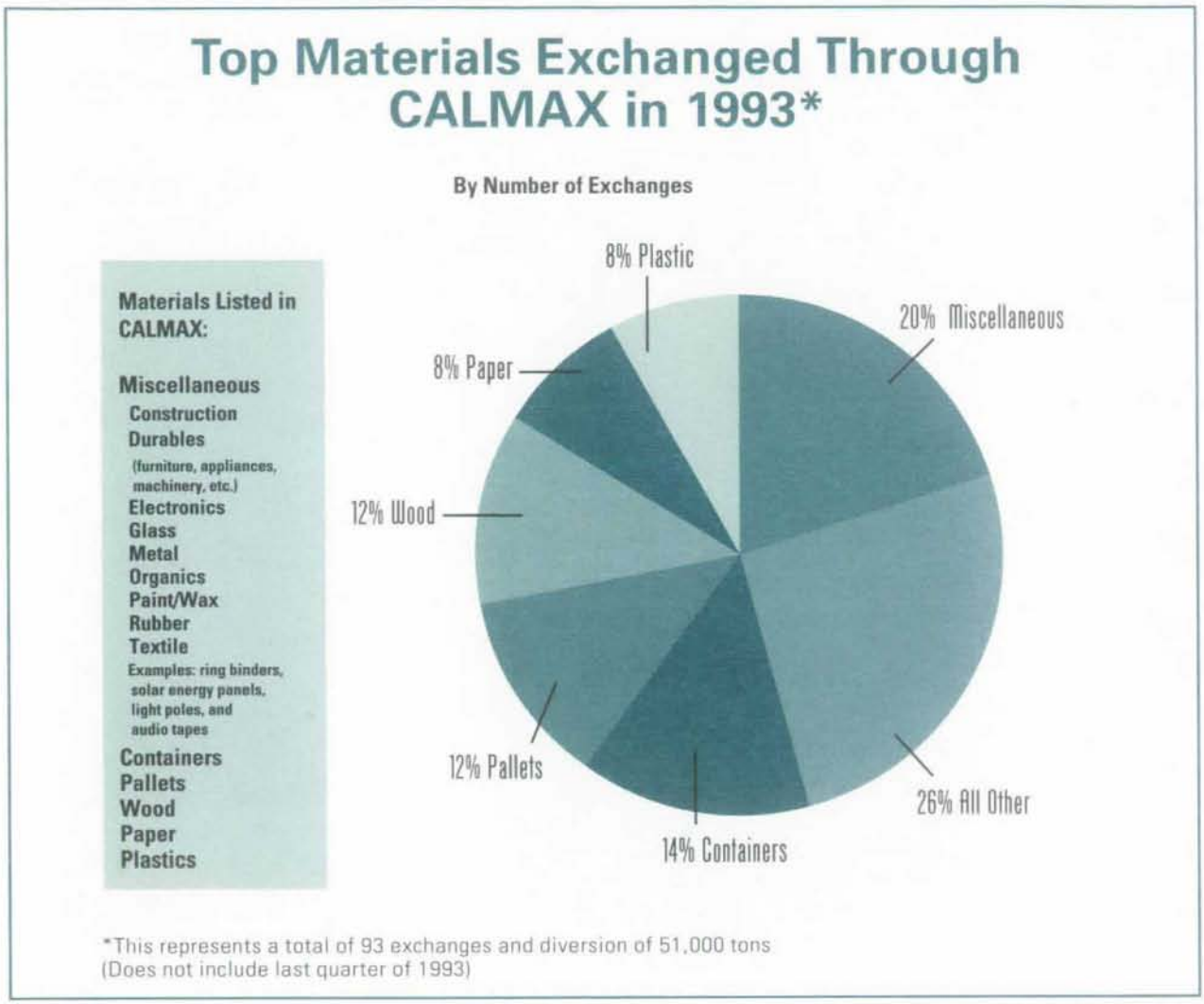


Figure I-2

indicates potential for a high degree of participation by schools. A significant increase in reuse and recycling is expected to result from KidMAX.

CASE STUDIES/ DEMONSTRATION PROJECTS

School Model Programs

[PRC 42620-42623]

The Board is developing and implementing a waste prevention (source reduction) and recycling program for school districts. This program includes:

- surveying school districts;
- developing a model waste prevention and recycling program for districts;
- training and ongoing technical assistance to districts;
- establishing a repository of literature and teaching materials;
- assessing equipment needs; and
- assisting districts in locating markets for recyclable materials and information on office equipment and other items made from recycled-content material.

Waste prevention and recycling programs instituted within schools, coupled with classroom environmental education, have proven successful throughout the state in diverting waste from landfills and educating students on how to be stewards of our natural resources.

Results from the Board's 1992 survey of K-12 schools confirmed the approach being taken by the Board to focus its efforts on developing model district-wide waste prevention and recycling programs. After analyzing this data, as well as surveying county recycling coordinators and assessing their needs, the Board developed a program that focuses on designing comprehensive IWM programs for school districts. Over the past year, the Board has worked extensively with school districts throughout the state, assisting them in developing waste management programs. Results of these programs have been used to identify the impact school district diversion programs can have on the waste stream, as well as to realize the significant cost savings school districts can achieve by implementing a comprehensive program.

Accomplishments

- The Board surveyed all county waste management coordinators to: 1) identify existing/proposed school district diversion programs; 2) assess local government assistance needs; and 3) inform counties of the Board's available resources. More than 25 percent of the coordinators requested assistance with developing school district programs in their jurisdictions. Other needs identified by the coordinators included: staff and training at the local level to develop programs, markets for recyclables (especially in rural areas), environmental education materials, waste prevention information, and resources to purchase equipment (e.g., storage containers and balers).
- Board staff are assisting specific school districts in developing district-wide pilot waste prevention and recycling programs. The school districts are located in the following counties: Calaveras, Fresno, San Diego, Placer, Sacramento, Alameda, Santa Clara, San Bernardino, Kern, and Stanislaus.
- To further extend technical assistance efforts and facilitate networking between districts, staff developed a statewide newsletter, *Reusable School News*. The newsletter is published three times a year and sent to local governments and school districts for distribution to individual school sites. To obtain a copy, please see the Publications List, Appendix D, Educational Materials for further information.
- *A Compendium For Integrated Waste Management*, containing a listing of quality literature and teaching materials from other states and institutions that have implemented waste prevention and recycling programs, was completed and is available. To obtain a copy, please see the Publications List, Appendix D, Educational Materials for further information.
- The Board developed a directory of existing school district waste reduction programs. The directory highlights unique aspects of each program. The directory is used as a reference for case studies and to highlight successful programs. Schools initiating waste reduction programs can contact other districts of similar size, location, and material types to use their programs as a model. To obtain a copy, please see the Publications List, Appendix D, Educational Materials for further information.
- Regional training workshops held in Southern and Northern California provided a networking opportunity for school districts, local governments, and industry. Model school district programs were highlighted.
- The Board developed two guides for school districts and local governments:
  - A guide, *$eeing Green Through Waste Prevention*, for school districts and local governments, was developed by the Board. This guide outlines steps for establishing a comprehensive program. To obtain a copy, please see the Publications List, Appendix D, Educational Materials for further information.
  - *A District-Wide Approach To Recycling* supplies detailed information necessary for implementing a recycling program for an entire district. The data in this guide is

supplemented with case studies based on various districts' experiences. To obtain a copy, please see the Publications List, Appendix D, Educational Materials for further information.

YARD WASTE PREVENTION

[PRC 42540]

Yard waste comprises nearly 15 percent of the California waste stream, with grass clippings accounting for nearly half of the yard waste generated during the growing season. This program provides guidance to local jurisdictions on yard waste prevention techniques, including: home composting, grasscycling, mulching, and low-waste landscaping. Providing yard waste prevention assistance to cities and counties serves to decrease material handling and disposal costs and contributes to achieving the mandated waste reduction goals.

Accomplishments

- The Board and Alameda County Home Composting hosted a Waste Prevention Symposium in Oakland to discuss low-waste landscaping, grasscycling, mulching, and home composting.
- The Board, in cooperation with the University of California Cooperative Extension, developed an educational pamphlet on grasscycling for local governments, landscapers, and the public. A Spanish version of the pamphlet will be completed in early 1994. Camera-ready copies of the brochure were provided to local jurisdictions for reprinting and distribution. The Board also worked to promote grasscycling within the "green" industry; consequently, the California Landscape Contractors Association officially endorsed grasscycling this year. To obtain a copy of the pamphlet, *Sending Your Grass Back to Its Roots: Grasscycling*, please see the Publications List, Appendix D, Waste Prevention for further information.
- Grasscycling demonstration sites were established by the Board at the State Capitol in the Spring of 1993 to illustrate the effectiveness of grasscycling in high-profile areas. A mulching mower was donated for the project by a major lawnmower manufacturer. The Board estimates that as a result of the project more than nine tons of grass clippings will be diverted annually.
- Bulk discount purchases of backyard composting books were provided by the Board to local jurisdictions to assist communities in the development of home composting programs.
- The Board assisted Sacramento County in developing two home composting demonstration sites in Sacramento. The Sacramento Tree Foundation uses the sites to educate residents on proper tree planting techniques; Sacramento County provides home composting education workshops.

RIGID PLASTIC PACKAGING CONTAINERS PROGRAM

[PRC 42300-42340]

Rigid plastic packaging containers (RPPC) represent a significant component of packaging waste generated in the state. RPPCs are used for products such as carbonated beverages, food, personal care, household cleaning agents, and automotive fluids. Approximately 800 million lbs. of RPPCs are generated annually. SB 235, the RPPC Act, by Senator Hart (Chapter 769, Stats. 1991), endeavors to achieve diversion goals through waste prevention, recycling, and promotion of markets for postconsumer RPPC material.

The RPPC Act requires that certain containers meet standards for source reduction, reuse or refilling, recycling, or postconsumer content. Beginning January 1, 1995, RPPCs sold or offered for sale in California are required to meet one of four compliance options. Two of these options are source reduction activities — the RPPC must be reduced in weight or volume by 10 percent (source reduced), or routinely reused or refilled five times.

Legislation effective January 1, 1994, SB 951 by Senator Hart (Chapter 1076, Stats. 1993) and SB 466 by Senator Boatwright (Chapter 1061, Stats. 1993), amends the RPPC Act. Changes include exempting food, cosmetic, and toiletry product manufacturers from the requirements of the RPPC Act until January 1, 1997. For a complete discus-

Businesses That Submitted WRAP Applications

Aerospace
Agriculture
Athletic Club
Automotive
Brewery
Chamber of Commerce
Chemical Manufacturer
Clothing Manufacturer
Communications
Computer
Construction
Consulting
Defense Supermarket
Distribution
Dry Cleaning
Education
Electrical Services
Electronics
Entertainment
Food and Beverage
Health Care Manufacturer
Hospital
Hotel/Motel
Information Management
Insurance
Landscape
Marketing
Metal Fabrication
Museum
Office Product Manufacturer
Oil Refinery
Paper Mill
Photography
Printing
Property Management
Publication
Resort
Restaurant
Retail
Storage
Technical Instrument Manufacturer
Toner Cartridge Remanufacturer
Transport
Utility
Veterinary
Vineyard
Waste Management

WRAP
WASTE REDUCTION AWARDS PROGRAM

Figure I-3

sion of new legislative changes to the act, the RPPC program, and the Board's accomplishments, please see Chapter II, Markets For Recyclable Materials, Minimum Recycled-Content.

WASTE REDUCTION AWARDS PROGRAM [PRC 42600(a)]

The Waste Reduction Awards Program (WRAP) provides an opportunity for California businesses to gain public recognition and statewide exposure for outstanding achievements in commercial IWM. Recognition of these businesses that are helping to reduce the state's waste problem while setting an example for others will stimulate additional private-sector advances. These businesses also supply the Board with information on how to provide assistance to other businesses.

Businesses are asked to complete an application relating to their waste management practices. Applicants do not compete by size or type of business, but are judged individually, based on an established set of criteria developed in conjunction with the business community. Practices evaluated include waste prevention, materials reuse, recycling, recycled product procurement, and employee education. Successful applicants receive a certificate from the Board along with a camera-ready WRAP emblem that can be used in any way the winners wish, including on products, advertising, and promotional materials.

Accomplishments

- The Board created the Waste Reduction Awards Program and received over 200 applications from all sizes and types of businesses. (See Figure I-3.) The applications were scored based on established criteria. Approximately 74 percent of the applicants met the criteria and received an award. The winners received state and local recognition through print, radio, and television media.

PRIMARY RESEARCH

Unit Pricing System Guidebook

In most communities a fixed monthly amount is charged for solid waste collection and disposal services. However, increasing numbers of communities are turning to unit pricing to finance solid waste collection and disposal. Unit pricing means charging households for waste services based on the amount and type of waste collected. Under this system, households that generate less waste will pay less for waste collection, providing an economic incentive to reduce the amount of waste generated.

Unit pricing is a "back-end" fee approach to promote waste prevention and diversion. The Board is also evaluating the use of "front-end" fees (fees levied on products or materials before they enter the waste stream).

Accomplishments

- Board staff, through a contractor, developed the following comprehensive series of guidebooks for jurisdictions wishing to explore or implement a unit pricing system: *Pay As You Throw*, *Unit Pricing for Solid Waste*, *Beyond the Decision*, and *Resource Guide to Unit Pricing for Solid Waste*. These documents lead jurisdictions through the planning and implementation of various types of unit pricing systems. They also suggest topics to consider for jurisdictions contemplating the adoption of a unit pricing system. Case studies on various jurisdictions throughout the country that have already implemented unit pricing systems are included in the guidebooks. To obtain copies of the guidebooks, please see the Publications List, Appendix D, Waste Prevention for further information.

II. Markets for Recyclable Materials

The Board administers an aggressive market development program. Developing markets for recyclable materials is critical if California is to meet its mandated waste diversion goals. It also creates opportunities for reindustrializing California and expanding the existing job force. Although many programs have been mandated by the Legislature, the Board is also engaged in other market development activities. These include: managing research; providing assistance to recycling businesses seeking to site manufacturing facilities in the state; and disseminating information on markets to those in the recycling community.

Market Development Plan: Although several market development programs exist within the state, there has never been a thorough understanding of California's recycling markets. Such an understanding is necessary to fully evaluate the effectiveness of existing programs, and to prioritize resources in future efforts. To provide such a vision, and to ensure that California's market development efforts are at the forefront of national efforts, the Board developed its first market development plan in 1993 [PRC 40507(d)]. The release of the plan, *Meeting the Challenge: A Market Development Plan for California*, in March 1993, marked a significant point in the Board's efforts to expand markets for recycled materials collected in California. The plan is the culmination of nearly 18 months of intense research and analysis. The Board worked with representatives from industry, environmental groups, local governments, and other interested parties in identifying barriers to secondary materials markets, opportunities to overcoming those barriers, and specific actions the Board can pursue to stimulate those markets.

The plan identified 16 priority actions for Board consideration and outlined efforts to assess emerging market trends for further consideration. High on the priority list are the following activities:

- promoting "Buy Recycled" by local and state governments and private industry;
- minimizing or eliminating barriers to the use of secondary materials;
- expanding low-interest loans for businesses using recycled materials;
- determining optimal sorting strategies; and
- working to find practical solutions to overcoming existing barriers to market development through Industry Advisory Task Forces.

The plan has become the cornerstone of the Board's market development program and has been instrumental in assisting local governments in the design of their own market development programs. It demonstrates that reuse and remanufacture of recyclable materials can result in the creation of a vigorous new industry that would create new manufacturing jobs, as well as jobs in sorting, processing and preparation of materials for market. The Board's efforts in implementing the Market Development Plan are highlighted below within the context of the Strategic Plan [PRC 40913].

Another component of the Market Development Plan is consideration and objective analysis of broad, emerging recycling policies that have long-range implications for market development in California. These emerging market development options include:

- fee-based incentive options, where a fee is charged on products and packaging prior to consumption or a fee is charged for waste management services after products are consumed;
- a tradable credit system, which provides a market-based mechanism to facilitate compliance with traditional command and control regulations;
- assigning manufacturer's a degree of responsibility for the waste associated with manufacturing processes, their products, and packaging; and

- the analysis of potential impacts of global trade agreements on market development efforts.

The Board completed analysis of emerging market development options in 1993, and issued a series of reports, including the *Emerging Market Development Options Summary Report*, which is based on the findings of the following reports: *Manufacturer Responsibility Options to Support IWM*, *Tradable Credit Applications to IWM*, and *Emerging Issues: Global Agreements*. To obtain copies of the reports, please see the Publications List, Appendix D, Markets Development for further information.

To obtain a copy of the Board's Market Development Plan, *Meeting the Challenge: A Market Development Plan for California*, please see the Publications List, Appendix D, Markets Development for further information.

Secondary Materials Market Assessment Study: To develop a broader understanding of secondary materials markets and provide a basis for future policy decisions, the Board contracted for a study to estimate the supply, demand, import and export of postconsumer recyclable materials for the western United States for a base year and two projection years. The study area encompassed California and 12 other states (Alaska, Arizona, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming). The study provides a quantitative assessment of the base year (1990 or 1991) and projected years 1995 and 2000, for three material categories: PETE plastic beverage containers, glass food and beverage containers, and six specific grades of recovered paper (newsprint, corrugated containers, computer printout, high grade paper, mixed office waste paper, and mixed paper). It also includes an assessment of trade flows between California and the western United States, and the Pacific Rim. The quantitative information for each secondary material is presented for the base year and two projected years (1995, 2000) for three scenarios: optimistic (high), most expected (best), and pessimistic (low). Major findings for California in the Year 2000 (most expected scenario) indicate: California will continue to rely heavily on the export market for paper and PETE to balance supply and demand, while in-state supply will exceed in-state demand for all materials other than glass. To obtain a copy of *Secondary Materials Market Assessment Study*, please see the Publications List, Appendix D, Markets Development for further information.

Incentives to Virgin and Secondary Materials: For years, the idea has circulated that sizable historical subsidies provided to virgin materials industries have inhibited the market development of secondary materials. According to this reasoning, the marketability of secondary materials would be improved by ending or reducing virgin materials subsidies. To better understand the impact California state subsidies may have on the demand for secondary materials, the Board contracted for a study of state incentives for use of virgin and secondary materials. The resulting report, *California's Incentives for Production of Virgin and Secondary Materials*, is a limited look at the role played by subsidies in markets for secondary materials. The report only addresses the issue of price competition between virgin and secondary materials, examining incentives provided by the State of California to virgin materials industries; it does not evaluate other incentives. Specific for California, the report suggests that current subsidies for virgin materials do not benefit those materials at the expense of secondary materials. To obtain a copy, please see the Publications List, Appendix D, Markets Development for further information.

Plastics Market Development: Complementary to the Board's Market Development Plan is a legislatively-mandated program to assess market development and the recyclability of plastic [PRC 42373]. The Board conducted a study identifying methods that increase the utilization of recyclable plastics in the manufacture of new products. The Board surveyed more than 2,600 users and possible users of recycled resins to determine their use or reasons for nonuse of recycled resins. Thirty-six percent of those responding indicated that they currently use either scrap or postconsumer resin whereas 64 percent indicated they do not. The major problems identified with using recycled resins were inconsistent color, levels of contamination (e.g., dirt and paper), reduced quality in the performance of the product, current specifications that limit the use of recycled resins, and the quality and cost of the finished product. The major methods recommended by the respondents to increase the use of recycled resins were to find

ways to lessen contamination and increase quality, along with research and development to lower the cost of using postconsumer resins. Results of the survey were tabulated in the *Action Plan: Plastics*. To obtain a copy, please see the Publications List, Appendix D, Markets Development for further information.

PUBLIC/PRIVATE "BUY RECYCLED" PROCUREMENT

[PCC 10860, 12150-12226, 12310, 12320, PRC 42600(d)]

AB 4 by Assemblymember Eastin (Chapter 1094, Stats. 1989) and SB 1322 by Senator Bergeson (Chapter 1096, Stats. 1989), established a broad program to increase state and local government procurement of products with recycled-content. This legislation has served as an example for the state and nation for encouraging the purchase of products made from secondary materials. It was designed to stimulate industry to expand its capacity to use secondary materials by providing a sizable and consistent demand; state and local government purchases account for approximately 8 percent of California's gross product.

At the same time, goals were set for state purchases of recycled-content products, including paper. The general goal requires that recycled-content products account for 10 percent of all state purchases by 1991, increasing to 20 percent by 1993, and to 40 percent by 1995 [PCC 12205 and 12320]. The recycled-content paper products goal requires that at least 35 percent of the total dollar amount spent for paper be for recycled-content paper products by 1992, increasing to 40 percent by 1994, and to 50 percent by 1996 [PCC 10860, 12162, and 12310].

To achieve the mandated recycled-content product procurement goals, the Board is working with the Department of General Services (DGS) to accomplish the following:

- provide necessary quality control, performance criteria, and recycled-content percentage standards required for products procured by state agencies;
- modify and implement specifications that will designate the use of products made with recycled-content by all state agencies;
- review and revise as necessary the procurement policies of agencies; and
- establish and implement purchasing practices for products containing recycled-content.

DGS, in consultation with the Board, is required to report annually to the Legislature on the procurement of recycled-content products by state agencies [PCC 12225]. Due to limited staff resources and pursuant to a legislative exemption for specific mandated reports (Chapter 710, Stats. 1992), DGS did not report the information this year. With the assistance of Board staff, DGS may have this information compiled by the summer of 1994.

In February 1993, the Board published and submitted to the Legislature a *State Recycled Procurement Report*. This report provided recommendations for State recycled procurement and market development. Specifically, the report addressed the effectiveness of the State's procurement preferences in encouraging recycling and expanding markets for recycled goods. Three major incentives (price preferences, set aside of a percentage of budgeted funds for procurement of recycled products, and minimum-content requirements) were identified that could be used to increase State recycled procurement. To obtain a copy, please see the Publications List, Appendix D, Recycling for further information.

Legislation effective January 1, 1994, AB 11 by Assemblymember Eastin (Chapter 960, Stats. 1993), incorporates recommendations from the *State Recycled Procurement Report*, recodifies requirements for State purchase of recycled products, and strengthens the State's recycled procurement program. It requires, if feasible, a State agency or contractor supplying materials, goods, or services to the State and Legislature to purchase fewer virgin products and more recycled products. State agencies are also required, if feasible, to establish purchasing practices that ensure the purchase of materials, goods, and supplies that can be recycled or reused when discarded. DGS is required to set the following goals for paper products purchased/procured:

For Paper Products:

1994	40% of total dollar amount
1996	50% of total dollar amount

For Printing and Writing Paper:

1994	15% of total purchases
1996	25% of total purchases

DGS is also required to set the following goals for purchase of recycled products by State agencies:

January 1, 1996	20% of total purchases
January 1, 1998	30% of total purchases
January 1, 2000	50% of total purchases

All State agencies are required to report to DGS and the Board on their progress in meeting the recycled procurement goals, and to submit a detailed plan to meet the goals. The Board, in consultation with DGS, is required to establish price preferences to meet recycled procurement goals on or before May 1, 1994. The Board is also required to implement a pilot program for funding claims submitted by State agencies for purchase preferences, $100,000 annually if funds are available.

The Board is continuing to assist State agencies in recycled product procurement. Technical assistance to encourage recycled procurement is provided to vendors, state-funded hospitals, universities, prisons, local governments, and their subcontractors. To promote the Buy Recycled program, the Board has developed a directory of California vendors that provide recycled products [PRC 42600 (d)]. Board staff makes this information available to State agencies and local governments in written and electronic formats. The directory lists manufacturers and distributors of recycled products in California. Board staff updates this listing with information from other State agencies and California industry representatives.

To encourage the purchase of recycled products, Board staff continues to make presentations to business, industrial, and residential consumers. Implementation of a United States Department of Energy grant demonstration project for national competitiveness is an example of this activity. The Board, in cooperation with a California manufacturer, is demonstrating the use of mixed waste paper in the construction of shipping pallets. This project is an effective demonstration of how recycled paper products can compete in nontraditional areas. Shipping products produced from the project directly compete with virgin lumber.

Local ordinances are one method of stimulating use of recycled-content products. Board staff have drafted a model ordinance that would stimulate the use of "green material" (mulch or compost) by commercial developers requiring local building permits. The material could be used as a mulch or soil amendment depending on the availability of materials and the intended use. This should stimulate recycling of organic materials at the local level. This ordinance will serve as a model for developing subsequent ordinances to promote use of recycled-content products in community development.

The Board is also exploring ways of encouraging public/private partnerships between entrepreneurs in the private sector and local government to establish recycled-content product manufacturing, which would help local governments meet waste diversion goals while expanding markets for recycled-content goods and materials.

Other specific goals for recycled products procurement set by legislation include: procurement of lead-acid batteries, retreaded tires, and compost.

Lead-Acid Batteries [PRC 42440-42443]

All lead-acid batteries purchased by any State agency on or before January 1, 1991, for use in automobiles and light trucks owned or operated by the State were required to be recycled lead-acid batteries. DGS is required to tabulate and forward annually to the Board the number of recycled lead-acid batteries purchased.

Accomplishments

- DGS was successful in awarding a contract to purchase recycled lead-acid batteries, resulting in statewide procurement of recycled lead-acid batteries. Due to limited staff resources and pursuant to a legislative exemption for specific mandated reports (Chapter 710, Stats. 1992), DGS did not tabulate the information this year. With the assistance of Board staff, DGS may have this information compiled by the summer of 1994.

Retreaded Tires [PRC 42400-42416]

To make a new passenger tire requires about 7 gallons of crude oil; to retread a tire requires only about 2.5 gallons, a savings of 4.5 gallons per tire.

Buying top-quality retreads keeps used tires out of landfills and saves energy. Energy savings are even greater for larger light and medium truck tires. For example, more than 145.8 million gallons of crude oil were saved in the United States in 1992, when more than 32.4 million tires were retreaded.

To encourage the use of retreaded tires, all tires for use on State passenger vehicles issued for short-term use through the Fleet Administration are required to be equipped with retreaded tires at the next tire installation. DGS and the Board, in consultation with representatives of the California retreading association, are required to adopt specifications for the purchase of retreaded tires by the State. DGS is then required to tabulate the number of retreaded tires it purchases annually and forward this information to the Board. On or before July 1, 1993, the Board, in consultation with DGS, was required to determine if the retreads purchased by DGS met the quality and performance criteria of a new tire.

The State does not have standards for retreaded tires; however, DGS does issue bid specifications for tire procurement. The Board has assisted DGS in an evaluation of quality standards for retreaded tires. DGS compared results of a recent performance tread test on retreaded passenger tires with State bid specifications for new tires; DGS's tire bid specifications require a new tire wear rating in excess of 60,000 miles. DGS released its findings in *Inspection Report, No.* 0932379. This evaluation concluded that the wear rate for retread tires and virgin tires is statistically equivalent; however, the retreaded passenger tires tested did not comply with State specifications because of tire tread separation. The DGS report concluded that the performance of retread tires is limited to the longevity of the casings, not the quality of the retread material. Casing failures occurred during testing of retreads, which was not observed for new tires or retreads on new casings. To help determine the cause of tire separation, the Board along with a representative of the retread tire manufacturer, evaluated the retreaded tires that failed the test. This subsequent evaluation suggested that the separation may have been caused by mounting procedures or the type of retread process used. Board staff will assist DGS in applying for a grant to further evaluate the cause of separation by broadening the range of passenger tire retreads to be tested. The grant will also be used to consider the possibility of establishing local markets for retreads through State agency contract procurement.

DGS has not purchased any retreaded passenger tires; however, Caltrans has successfully purchased both retreaded truck and special equipment tires. Caltrans' purchase of retreaded tires has resulted in a savings of more than $214,000 for the 1991/92 fiscal year, and almost $407,000 for 1992/93.

The Federal Government Retread Tire Program, in comparison, is attempting to standardize throughout the federal, state, county, and municipal governments, methods for contracting for retread tires and retread services. The goal of the federal government is to standardize the way all agencies contract for retread tires and retread services in order to assure the lowest possible cost. The federal program only contracts for premium and premium plus tires, which include retreaded passenger tires. The program is encouraging state and local governments to incorporate within their solicitations wording that requires federal specifications to be used as listed on the federal Qualified Products List (QPL). The federal QPL test includes a 20,000-mile tread-wear durability test. Federal QPL retreaded passenger tires must meet all the same performance requirements as new passenger tires, except retreaded passenger tires have a lower minimum tread-wear requirement.

Accomplishments

- The Board has identified the following obstacles to an increased retread market:
  - Worldwide overcapacity of tire production; both domestic and foreign producers are offering new tires at discount prices.
  - Consumer perception that retreaded tires are unsafe and inferior to new tires.
  - Limited availability of retread tires; most national tire companies no longer allow their outlets to carry retreads.
  - A segmented tire market; consistent supplies of high quality casings for retreading are difficult to maintain.
  - Unsuitability of many tires for retreading.
  - Limited profits for dealers offering retreads; marginal cost of stocking retreads is not offset by higher profit.

To reduce these obstacles, the Board is working with the retread industry to encourage DGS and other State departments, local governments, and businesses to purchase retread tires. The Board familiarizes procurement officers, fleet administrators, and members of the public by mailing retread marketing information upon request, providing information concerning retreading at Buy Recycled vendor product shows, and giving retreading presentations at conferences. Three California manufacturers are showing notable market successes with retread passenger tires.

Compost

[PRC 42240-42243]

Composting organic materials provides a valuable product that can enrich California soils, conserve water in landscaping, and preserve landfill space. The California Department of Forestry and Fire Protection (CDF), the State Department of Parks and Recreation (DPR), and DGS, in cooperation with the Board, are required to identify and evaluate uses for compost, co-compost, and chemically-fixed sewage sludge in public land restoration projects, state landscaping projects, and park and recreational area maintenance programs. These departments were required to initiate programs that use compost, co-compost, and chemically-fixed sewage sludge after January 1, 1993; and the Department of Transportation (Caltrans) is required to use compost in place of, or to supplement, petroleum-based commercial fertilizers in the State's highway landscape maintenance program.

DGS and the Board, in consultation with other State agencies, are required to adopt specifications for the purchase of compost by the State. However, development of the specifications has been delayed because of the need to address the tremendous diversity of compost products available for use. DGS developed the bid specification for compost products using agency status reports on the compost evaluation and field performance information, comments from the compost industry, and assistance from the Board's compost working group.

Accomplishments

- The Board entered into interagency agreements with Caltrans, DPR, and CDF for compost use evaluation, which resulted in the following evaluations:

  Caltrans concluded that green material mulch and compost retained soil moisture, leveled soil temperature extremes, and provided an enhanced habitat with a net impact of increased plant growth when used on highway landscape plantings. Caltrans staff received numerous compliments regarding the appearance of the mulched sites. Caltrans personnel have indicated they intend to continue the evaluation for two years before considering recommendations for policy changes.

  DPR's results demonstrated that compost can be beneficial as a soil amendment for aiding revegetation, especially in areas where the topsoil has been removed. A grass revegetation project evaluating compost usage was successfully conducted at an off-highway vehicle site. DPR's report suggested that future compost usage might be considered in areas that have recurring erosion problems.

  CDF reported that the purpose of applying mulch around the base of a tree is to mitigate adverse temperatures or moisture loss, control weeds, or enhance soil structure and fertility. For reforestation purposes, mulch must be long lasting, low in cost, and easy to transport. CDF found that compost lacked the following desirable characteristics: control of competing vegetation, long lasting, low in cost, and easy to transport. Compost is short-lived due to surface wind and water erosion.

  The Board is developing a fact sheet summarizing the compost evaluations.

- DGS, in cooperation with the Board, drafted compost specifications for use in State agency procurement; DGS compost bid documents include these specifications. Agencies use these specifications when purchasing compost under their delegated purchasing authority. The specifications are

general in nature and designed to maximize the use of compost without jeopardizing the safety and health of the public or the environment.

MINIMUM RECYCLED-CONTENT

Newsprint [PRC 42750-42791]

California newsprint consumers (commercial printers and publishers) are required to:

- use recycled-content newsprint, defined as newsprint in which not less than 40% of the fiber is postconsumer waste paper;
- ensure that at least 25% of all newsprint used is recycled-content newsprint (the use requirement increases to 30% in 1994, 35% in 1996, 40% in 1998, and 50% in the year 2000); and
- certify to the Board the number of tons of newsprint and recycled-content newsprint used during the preceding calendar year.

In addition, all suppliers selling newsprint in California are required to certify annually to their customers the amounts of recycled-content newsprint contained in each shipment. The Board is required to develop and maintain a list of every consumer and supplier of newsprint.

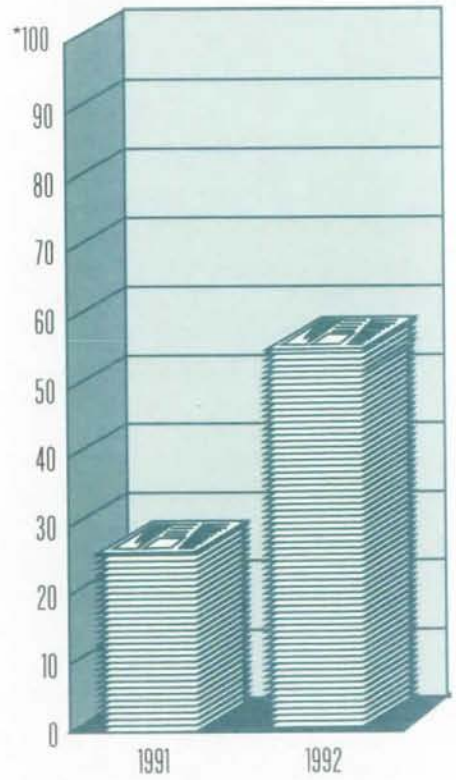
The Board estimates that nearly 1.8 million tons of newsprint were disposed in landfills in 1990. The American Newspaper Institute estimated the 1992 maximum recovery rate for newsprint at between 50 and 55 percent. It is likely the rate will grow considerably in the next few years.

California, with its minimum recycled-content requirement, was one of the first states in the nation to mandate private sector use of secondary materials. The newsprint law is credited with encouraging paper manufacturers to expand industrial capacity to use secondary materials in California and throughout North America.

Accomplishments

- The Board processed certifications from consumers of newsprint received for the 1992 reporting period, accounting for a total of approximately 2.2 million metric tons of newsprint. Consumers reported that 55 percent of the total metric tons used was recycled-content newsprint (newsprint in which a minimum of 40 percent of the fiber is postconsumer waste paper). As a group, 79 percent of California commercial printers and publishers used at least the required minimum recycled-content newsprint in their operations. (See Figure II-1 for a comparison of recycled-content newsprint used by consumers for 1991 and 1992.)
- The Board began the follow-up work required to develop a complete newsprint consumer list, as mandated by law. (Approximately 30 percent of the potential newsprint consumers surveyed responded to printer/publisher surveys.) To facilitate this effort, the Board also upgraded the database of commercial printers.

Usage Comparision of Recycled-Content Newsprint



*Percentage of total newsprint used.

Figure II-1

- Testing of newsprint samples was completed and results were published as the 1994 comparable quality standards. PRC 42775 requires the Board to establish comparable quality standards to determine the quality of recycled-content newsprint compared to virgin newsprint. These standards are to be reviewed and published by November 30 each year. To obtain a copy, please see the Publications List, Appendix D, Newsprint for further information.

Trash Bags [PRC 41970-41978]

Approximately, 4 billion plastic trash bags are sold in California annually and more than 840 thousand tons of film plastic bags were dumped into the state's landfills in 1990. If these bags contained 30 percent recycled postconsumer plastic material, a market would be created for approximately 100 million lbs. of secondary material annually in California.

To increase the demand for secondary material, every seller of trash bags of 1.0 mil or greater thickness sold in California is required to ensure that by January 1, 1993, at least 10 percent of the material used in the bags is recycled postconsumer material. Beginning in 1995, every seller of trash bags of 0.75 mil or greater thickness sold in California is required to ensure that at least 30 percent of the material is recycled postconsumer material.

Each seller of trash bags is also required to certify to the Board annually that it has complied with the requirements. Each seller of recycled postconsumer material to a manufacturer of trash bags is required to certify to the Board annually the percentage of recycled postconsumer materials it sells.

Accomplishments

- The Board adopted regulations to implement the annual certification process for trash bags.
- First certifications are due to the Board beginning in March 1994. Staff has developed the certification forms and initiated the database designed to process the certification/audit information.

Rigid Plastic Packaging Containers Program [PRC 42300-42340]

Rigid plastic packaging containers (RPPC) represent a significant component of packaging waste generated in the state. Approximately 800 million lbs. of RPPCs are generated annually. To address this and other solid waste issues, California is increasing its efforts to achieve diversion goals through waste prevention, recycling, and promoting markets for postconsumer RPPC material. SB 235, the RPPC Act, by Senator Hart (Chapter 769, Stats. 1991) endeavors to achieve various diversion goals for RPPCs, a very visible component of the waste stream.

The RPPC Act requires that certain containers meet standards for waste prevention, reuse or refilling, recycling, or postconsumer content, but also provides flexibility to help responsible entities comply with the statute. Beginning January 1, 1995, all RPPCs sold or offered for sale in California are required to meet one of the following criteria: 1) be made from 25 percent postconsumer material; 2) have a recycling rate of 25 percent if its primary material is not PETE; 3) have a recycling rate of 55 percent if its primary material is PETE; 4) be reused or refilled at least five times; or 5) be reduced in weight or volume by 10 percent.

Legislation effective January 1, 1994, SB 951 by Senator Hart (Chapter 1076, Stats. 1993) and SB 466 by Senator Boatwright (Chapter 1061, Stats. 1993), amends the RPPC Act. This legislation clarifies the existing RPPC Act and substantially modifies some of its requirements. Specifically, it includes all RPPCs, regardless of size or exemption, in the calculation of RPPC recycling rates; includes PETE RPPCs in the aggregate recycling rate; and clarifies that source reduction need only occur one time to achieve compliance. The legislation also includes the following new, temporary compliance waivers: a new one-year compliance waiver for new products sold in California; a temporary waiver until January 1, 1996, for RPPCs used to transport hazardous materials regulated by the federal Department of Transportation; and a temporary waiver until January 1, 1997, for RPPCs used to package food or cosmetics. Resin and product manufacturers are required to report to the Board on their efforts to ensure all feasible actions are taken to reduce, recycle, and reuse RPPCs, and to develop markets for postconsumer

RPPCs; container manufacturers are required to seek from the federal Food and Drug Administration letters of non-objection to the use of postconsumer resin in packages that come in contact with food or cosmetics.

Accomplishments

- In June, the Board adopted a report that includes program implementation plans, funding method options for program administration, and recommendations for modifying specific areas of the legislation. Newly enacted legislation, SB 951 and SB 466, reflects many of the report's recommendations. The conceptual implementation plan clarifies which manufacturers are affected by the program. It also includes options for certification, compliance, program funding, and exemption criteria. To obtain a copy of the Board's *Conceptual Plan to Implement the Rigid Plastic Packaging Container Act*, please see the Publications List, Appendix D, Plastics for further information. As a follow-up to the report, the Board is drafting regulations on program procedures, incorporating the changes from SB 951 and SB 466.
- The Board developed and approved recycling rates for PETE, non-PETE containers, and all RPPCs to quantify the rate that RPPCs are being recycled, as required pursuant to PRC 42310. Because specific data entirely consistent with SB 235's parameters was not available, a range of rates was developed and a "most likely" rate for each category was approved. Listed below are the most likely recycling rates by RPPC category:

RPPC Category	*1990 Rate*	*1992 Rate*
PETE	20.6 %	34.9 %
Non-PETE	3.3 %	5.4 %
Aggregate	5.8 %	9.8 %

To obtain a copy of the Recycling Rate Report, please see the Publications List, Appendix D, Plastics for further information.

MARKET RESEARCH AND ANALYSIS

Market Status Reports and Action Plans

The Board develops and updates market status reports for the most common secondary material types (e.g., mixed waste paper, compostables, HDPE and unsorted plastics, glass, ferrous metal, tires, pavement and inerts, newsprint, and corrugated cardboard). These status reports contain information on current market conditions and trends (supply, demand, and prices); and identify barriers to market development and actions to overcome those barriers for the Legislature, the Board, local governments, and others to consider.

In 1993, the Board developed action plans for the common secondary material types. Each action plan contains a prioritized listing of immediate market development actions. Actions were prioritized according to criteria such as potential waste diversion, job creation, and potential for attracting capital investment. The top-ranked actions form the core of the market development plan.

Accomplishments

- The Board updated market status reports and action plans for glass and pavement, as well as the action plans for ferrous metals and mixed waste paper; and completed a market status report for waste tires. To obtain copies of the Board's market status reports and action plans, please see the Publications List, Appendix D, Markets Development for further information.

Waste Paper Market Development Strategy

Paper (i.e., high grade paper, newspaper, corrugated containers, mixed paper, and other paper) represented approximately 30 percent of the waste going to California's landfills in 1990. However, in 1990, paper had less than a 23 percent diversion rate in California and in March 1993, mixed paper was identified in the Market Development Plan as a priority material for market development. Recognizing the significance of paper in California's waste stream and the need to divert a significant portion if local governments are to meet their 1995 and 2000 diversion goals, the Board analyzed

options to increase the use of postconsumer material in old corrugated containers (OCC) and recovered printing and writing papers. These options included minimum recycled-content requirements with or without tradable credits, minimum secondary fiber utilization requirements, and industry-sponsored and supported voluntary programs. In December 1993, the Board expanded its focus to include all postconsumer waste paper generated in California, addressing a broader cross section of the paper industry and providing greater flexibility for industry to increase its use of postconsumer waste paper.

Accomplishments

- The Board adopted a voluntary program to increase the use of postconsumer waste paper by the paper industry. This program consists of the following key elements:
  - An initial utilization for recycling goal of not less than 50 percent for postconsumer waste paper generated in California by the year 2000.
  - Establishment of a waste paper working group to recommend to Board staff the following: a methodology and definitions for assessing the amount of paper in the state's waste stream and the amount of paper recovered; and final paper reduction, recovery and reuse goals for every year up to the year 2000 for all major grades of California postconsumer waste paper. The working group consists of representatives from the paper industry, waste management industry, recyclers, local government, the environmental community, and other interested parties.
  - Development of a process and criteria for the reporting and evaluation of industry's progress toward meeting the Board's goals. The Board will review industry's progress annually and may, where necessary, adjust its goals for specific paper grades, or prescribe product and/or company-specific minimum-content and/or minimum utilization rates.

Mixed Paper and Minimum-Content Product Reports

[SB 1919, Hart, Chapter 688, Stats. 1992, and PRC 42776]

Mixed paper comprised approximately 8 percent of the waste disposed in California landfills in 1990. To assess market development and the recyclability of mixed waste paper, SB 960 by Senator Hart (Chapter 1012, Stats. 1991) and SB 1919 by Senator Hart (Chapter 688, Stats. 1992) require the Board to submit to the Legislature by January 1, 1994, recommendations for programs to develop markets and encourage high levels of recycling for mixed waste paper. Mixed waste paper is a mixture of paper materials, including newspaper, corrugated cardboard, office paper, computer paper, white paper, coated paper stock, and residential papers (e.g., cereal boxes, mail, milk cartons).

The Board investigated ways of promoting the use of mixed paper and providing better information on the availability of papers made from recycled-content. The findings confirmed recommendations in the Board's 1992 report, *Action Plan: Waste Paper*, which described 16 specific actions the Board, the Legislature, and private industry could consider to expand the use of mixed office and residential paper. (Please see Accomplishments below.)

The Board has also initiated a survey of the marketplace to "assess the availability, quality, and markets for all recycled-content papers" as required by PRC 42776. The final report, due for completion by July 1, 1994, will be used to develop procurement programs, provide information to government and private industry buyers, and stimulate consumer demand for recycled-content papers.

Accomplishments

- The Board updated its 1992 report, *Action Plan: Waste Paper*, to fulfill the requirements specified by SB 960 and SB 1919. The revised action plan, *Recommendations to Increase Recycling of Mixed Paper Generated in California: A Report to the Legislature*, identifies 13 actions for consideration by the Board, the Legislature, and private industry to expand the use of mixed office and residential paper. These include: a variety of business incentives; the develop-

ment of an industry/State task force to consider strategies; consumer incentives; public and private procurement incentives; the design of an information database; and research to assess sorting strategies, the use of mixed residential papers, and "design for recycling" to eliminate contaminants from manufacturing processes. To obtain a copy, please see the Publications List, Appendix D, Markets Development for further information.

RECYCLING MARKET DEVELOPMENT ZONES

[PRC 42140-42158]

Recycling Market Development Zones (RMDZs) are tools to help communities meet the waste diversion goals set by the Integrated Waste Management (IWM) Act. RMDZs combine recycling with economic development by helping communities view garbage as a valuable raw material resource available to fuel new businesses and create jobs, while diverting materials from landfills. The zones are modeled, in part, after the California Department of Commerce's Enterprise Zones, and consist of specific geographic areas designated by the Board at the request of local governments. To date, the Board has designated 17 zones and plans on designating a total of 40 zones by 1996. (See Figure II-2 Page 34, for a map showing the 17 designated zones.)

In concert with local governments, the Board develops economic development strategies designed to promote recycling businesses. Special incentives are offered to recycling businesses located in RMDZs. In turn, the community benefits from increased recycling, increased employment and tax revenue, and a diversified economic base. Among the state incentives offered are low-interest loans and technical assistance in business financing and product marketing. The Board also provides direct assistance to recycling manufacturers seeking to site facilities in California by providing referrals to other state and local organizations involved in obtaining permits and other facility development requirements.

The RMDZ program provides direct loans to recycling businesses and local governments located in designated zone areas. Private businesses and not-for-profit organizations may borrow funds to create or convert manufacturing processes to use recycled materials. Local governments may borrow funds to expand their infrastructure necessary to support recycling industries. The maximum loan amount is 50 percent of the cost of a project, or up to $1 million. The loans are made directly from the Recycling Market Development Revolving Loan Account, funded at $5 million annually. The Board also committed $500,000 in the 1992/1993 fiscal year, and $1 million for 1993/94 from the California Tire Recycling Management Fund to be administered through the RMDZ program for tire-related projects.

Through its loan program, the Board has encouraged existing manufacturers to substitute secondary materials for primary materials in their production processes ($4.3 million in loans to 10 existing manufacturers); encouraged the development of new industries in California that use secondary materials ($2.2 million in loans to six start-up manufacturing operations); and promoted improvements to the quality of diverted materials to enhance their marketability ($1.2 million for three loans to upgrade the processing of materials at community recycling centers, that will result in almost 30,000 tons of materials being diverted into a more marketable state). The Board was successful in targeting the following high priority materials for market development: mixed paper, scrap plastics, and yard waste.

In addition to the RMDZ loan program, the Board also provides general assistance to recycling manufacturers seeking financing and provides training to RMDZ administrators on financing issues.

Local governments also offer their own incentives to businesses locating in RMDZs. These include:

- relaxing or suspending local building codes, zoning laws, and general plans;
- eliminating or reducing fees for applications, permits, and local government services to establish a streamlined local permit process;
- eliminating or reducing construction or business licensing taxes;
- expanding the infrastructure to serve recycling businesses; and

Recycling Market Development Zones

Zones

1. Southern Alameda County
2. Central Coast (Monterey, Santa Cruz, San Benito, San Luis Obispo)
3. Contra Costa
4. Glenn County
5. Humboldt County
6. Long Beach City
7. Los Angeles City
8. Merced/Atwater
9. Oakland/Berkley
10. City of Oroville
11. City of Porterville
12. Agua Mansa (San Bernardino/Riverside)
13. San Diego City
14. Greater South San Joaquin Valley (Tulare and Kings Counties)
15. Sacramento
16. Ventura County
17. Riverside County

Figure II-2

- increasing the amounts of recyclable feedstock available for industry and/or providing industry with a steady supply of consistent quality materials.

Accomplishments

- The first four cycles of the RMDZ loan program occurred in 1993. The Board approved approximately $7.7 million in loans to 19 businesses. The loans will assist these businesses in creating more than 300 jobs, while handling over 800,000 tons of recyclable materials annually.
- Five new RMDZs, regionally dispersed throughout the state, were designated. The five zones are: Southern Alameda County; Monterey, Santa Cruz, San Benito, and San Luis Obispo Counties (Central Coast Zone); Humboldt County; Riverside County; and Greater South San Joaquin Valley. A third cycle of zone designations was initiated and four regional workshops were held for prospective applicants. The Board received 13 applications for zone designation in late 1993.
- The Board adopted regulations to allow existing zones to expand or otherwise adjust their boundaries without needing to reapply for designation. For example, it may be found that a zone is too small to be effective or that a zone comprised of a county's unincorporated area could benefit if some of the county's cities were included in the zone.

RECYCLING EQUIPMENT TAX CREDIT PROGRAM

[PRC 40507(g), RTC 17052.14 and 23612.5]

California offered a 40-percent tax credit for recycling equipment for the taxable years beginning January 1, 1989 through December 31, 1993. A credit of up to $250,000 was allowed for equipment that was used in the manufacture of finished products meeting the following conditions: 1) at least 50 percent of the product was composed of secondary waste discarded in California; and 2) at least 10 percent of the secondary waste was postconsumer waste, also from California. The credit was intended to increase the number of manufacturers processing secondary materials into new products. Eligible equipment must be located in California.

Any individual, business, or corporation that incurred a tax liability to the State of California was eligible for the tax credit. Qualified equipment must have been purchased and in operation on or after January 1, 1989, and before January 1, 1994. The Board reviewed applications from taxpayers and certified to the State Franchise Tax Board when all provisions of statutes and regulations had been met.

Accomplishments

- The Board adopted a report on the Recycling Equipment Tax Credit Program, required by RTC Sections 17052.14(j) and 23612.5(j), which includes the following findings:

  Through October 1993, the Board received 107 applications for certification, issued 72 certifications, and denied 25 (10 applications are pending). The estimated allowable credit for equipment purchased is $7.3 million, with an expected 4.5 million tons of secondary materials being used annually by the certified taxpayers. The majority of the equipment (56 percent), as well as dollars expended (55 percent) was for the asphalt/concrete and metals industries. This equipment included grinders and crushers to reclaim old concrete and return it to a marketable aggregate; specialized asphalt milling equipment that grinds old asphalt and lays it back into new asphalt; and steel and aluminum furnaces to produce ingot and billet to be used in the manufacture of new products.

  Tax credits are considered a positive factor in attracting economic development. Taxpayers indicated that if the program is extended, they would consider purchasing additional new equipment. Although research indicated shortcomings in the existing program, modification to the program could greatly increase the effectiveness of the Recycling Equipment Tax Credit. These include: allowing lease arrangements; allowing for specified reuse equipment, limiting the tax credit to equipment for specific materials that need financial incentive; and requiring a prefiling before an application is submitted and the recycling equipment is purchased. To obtain a copy, please see the Publications List, Appendix D, Markets Development for further information.

RESEARCH AND DEVELOPMENT PROGRAM

[PRC 42650]

As part of the Board's comprehensive Research and Development Program, Board staff conduct research to overcome technological barriers to expanded uses of recycled materials and compost products and to assist in implementing innovative resource management and waste reduction programs. As part of this program, the Board is exploring several approaches that could improve the marketing of secondary materials.

Santa Barbara County Compost Market Project

The Board is co-funding a portion of a three-year compost market research and development project. The program is a two-stage project designed to develop practical information on the marketability of compost, which can be used statewide. The first stage of the project, the planning stage, assesses potential markets for compost generated from a variety of municipal solid waste feedstocks. The research focuses on market capacity in the Santa Barbara County area and assesses the environmental and economic benefits of composting. The second stage of the project involves testing to evaluate the utility of various product specifications and standards necessary to ensure the safety and marketability of municipal solid waste compost.

The Board is funding a portion of the planning stage, including a literature review on compost market development, a preliminary compost market assessment, compost field experiments, and laboratory testing. Information gathered is to be used to prepare materials which will be available statewide on compost markets and field demonstrations. These materials will be available in mid-1994.

Rubberized Asphalt Concrete Projects

[PRC 42871, 42872, 42873(5)(B)]

California has a total waste tire inventory exceeding 25 million tires found in more than 140 waste tire piles in the state. Although tires by weight constitute only about one-half of one percent of the total municipal waste stream, their size, shape, and physical properties present an unusually challenging disposal problem. Under the California Tire Recycling Act [PRC 42860-42895], which authorizes funding for activities that reduce the landfill disposal of used whole tires including the manufacture of products made from used tires, the Board has contracted with Caltrans to test the use of rubberized asphalt concrete (RAC) made from used tires. Caltrans, cities, and counties are currently using a limited amount of RAC. The purpose of the contracts is to encourage the increased use of RAC for roadway applications. Caltrans will research and document the effects of RAC on human health and the environment and evaluate its long-term performance.

Accomplishments

- The Board contracted with Caltrans for two testing projects. The first contract is for Caltrans' Department of Maintenance (DOM) to perform field testing on RAC in maintenance applications. The test section was constructed from August to October 1993, and is located on Highway 16 near Woodland, California. It is 8 miles in length; 15 different mixtures potentially used in maintenance of highways are being tested in this area. The pavement will be monitored for 15 years. The DOM will provide biennial reports beginning in 1997, documenting the status of the 15 test strategies.

  The second contract is for Caltrans' New Technology, Materials & Research (NTM&R) to develop construction specifications for RAC in roadway rehabilitation applications. Caltrans developed specifications for the most commonly used RAC and is currently collecting field data and testing in the laboratory to develop specifications for other types of RAC. In support of this contract, a Board employee has been on loan to Caltrans to set up a database of existing and in-progress RAC projects. As part of this contract, NTM&R has also developed a contract with the Air Resources Board to conduct field emissions testing during the recycling of RAC. A site in San Bernardino County has been selected and the project is expected to begin in February 1994. Emissions testing should begin in April 1994, with results expected by October of the same year.

III. Waste Stream Diversion

The central component of the California Integrated Waste Management (IWM) Act is the waste stream diversion goals for 1995 and 2000. By January 1995, each city and county is required to divert 25 percent of its solid waste from landfills through waste prevention, recycling, and composting. Fifty-percent diversion is required by the year 2000. (Transformation may account for up to 10 percent of the mandated 50 percent.) To help realize this goal, each city and county is required, with the oversight and assistance of the Board, to develop a plan and implement programs to meet these goals. Countywide Integrated Waste Management Plans (CIWMP), submitted for Board review and approval, include specified elements from each city and county regarding plans for waste prevention and recycling, household hazardous waste management, and siting of solid waste facilities.

In addition to assisting local governments in the development and implementation of their CIWMPs, the Board is assisting local governments in meeting their waste diversion goals through implementation of specific programs. These programs include public information and education programs; the California Materials Exchange program; Project Recycle; school model programs; and programs to achieve diversion of specific materials, such as used oil, compost, and sewage sludge.

LOCAL IWM PLANNING

CIWMP Review

[PRC 41000, 41300, 41500, 41510, 41700, 41780, 41782, 41790, 41821, and 41825]

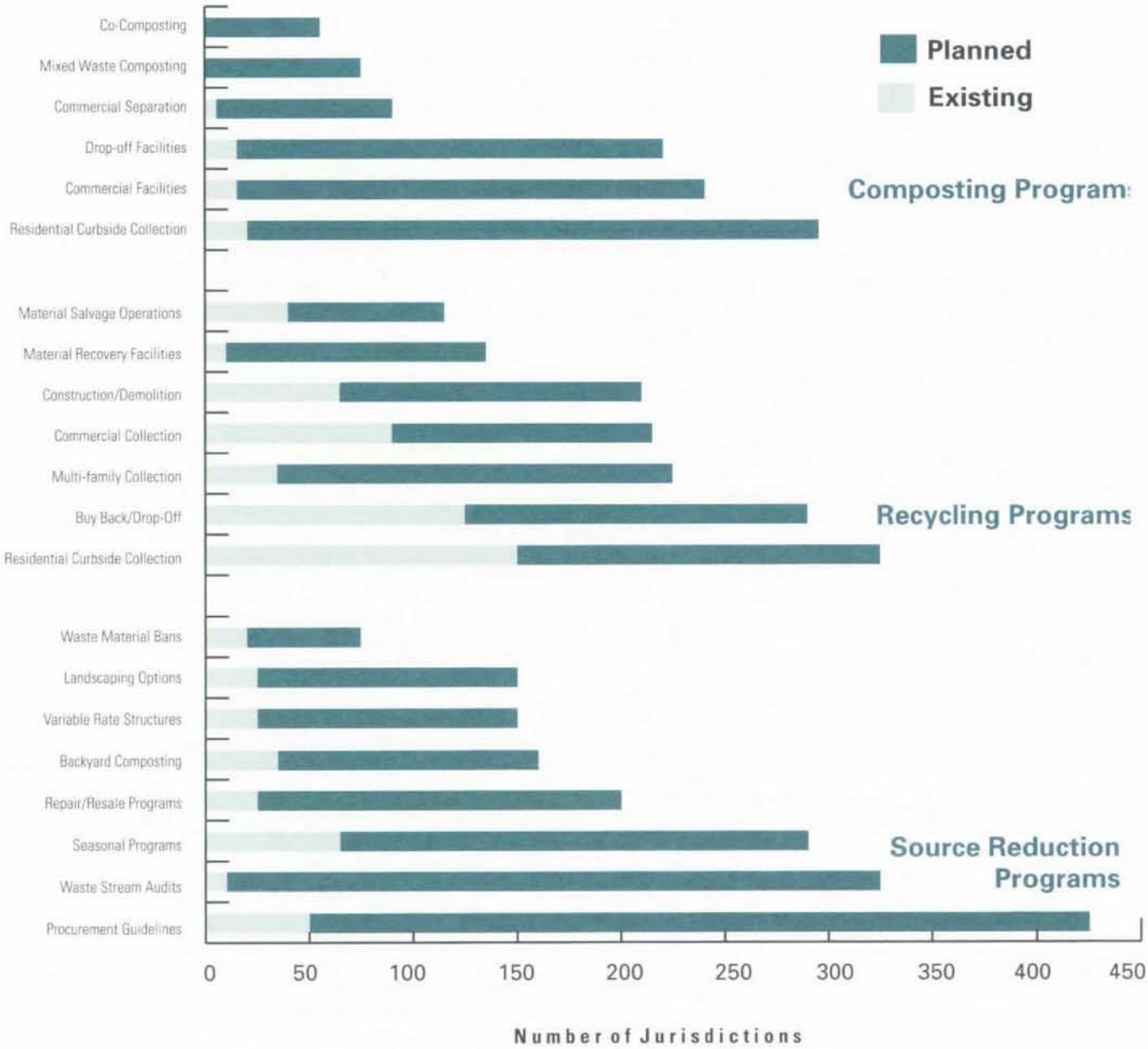
California's goal is to conserve its natural resources and extend the life of its landfills by generating less waste, recycling, and composting. Cities and counties must help achieve this goal through the development and implementation of CIWMPs and city and county elements, demonstrating how the mandated diversion goals will be met. CIWMPs include a county Summary Plan and Siting Element, and for each jurisdiction in the county, a Source Reduction and Recycling Element (SRRE), a Household Hazardous Waste Element (HHWE), and a Nondisposal Facility Element (NDFE). Upon Board adoption of the CIWMP, local jurisdictions must also prepare an annual report detailing their progress in meeting the planning and diversion requirements [PRC 41821]. (See Figure III-1, Page 38, for a listing of the most popular diversion programs, existing or planned, as identified by local jurisdictions in their preliminary draft SRREs.)

Through its review of CIWMPs, the Board can determine if local jurisdictions are experiencing difficulties in implementing their diversion programs and provide technical assistance to overcome barriers. At the same time, the Board analyzes programs for the purpose of assisting cities, counties, and regional agencies in implementing waste prevention ideas, recycling market development strategies, and other programs or activities.

In response to local government concerns about implementation of the IWM Act, the Board initiated legislation significantly modifying the planning requirements: AB 2494 by Assemblymember Sher (Chapter 1292, Stats. 1992) and AB 3001 by Assemblymember Cortese (Chapter 1291, Stats. 1992). AB 2494 has effectively streamlined planning and diversion reporting requirements for local jurisdictions, providing significant financial relief to all jurisdictions by going to a "disposal-based" method to determine compliance with the diversion mandates; providing for regional implementation of the planning mandates; and by requiring the Board to provide local governments with increased assistance. AB 3001 requires jurisdictions to prepare NDFEs for local planning of diversion facilities. The

Existing and Planned Diversion Programs Identified in SRREs

by the Local Jurisdictions



***Definitions:**

Co-Composting- Composting of sludge along with solid waste which contains green waste, yard waste, and wood and paper products.

Mixed Waste Composting- Composting of solid waste which contains food matter as well as green waste, yard waste, and wood and paper products.

Commercial Facilities- Facilities set aside by the private sector, or in conjunction with the local jurisdiction, to process large volumes of targeted waste materials, such as green waste or C/D materials.

Figure III-1

NDFE provides a means for linking the planning process with the infrastructure necessary to implement the contents of the CIWMPs.

Legislation passed this year, AB 440 by Assemblymember Sher (Chapter 1169, Stats. 1993), has effectively modified the submittal of the planning elements by requiring an earlier submittal date of the elements. This will allow a more timely review of local diversion programs prior to the 1995 goal year. Cities and counties are required to adopt final SRREs and NDFEs and submit them, separate from the CIWMP, to the Board by a specific date for 120-day review and approval. The submittal dates are determined by the remaining disposal capacity in the county, and will be received in three waves, beginning April 30, 1994, and ending December 31, 1994. In addition, jurisdictions are to submit, at the time SRREs are submitted, a status report on the progress made in implementing programs and in achieving the diversion mandates. The first wave of CIWMPs, comprised of a Countywide or Regional Agency Summary Plan and Siting Element, and HHWE for each jurisdiction in the county, are due in late 1994.

Once CIWMPs and elements are approved by the Board, staff will track and evaluate CIWMP and element implementation to determine a jurisdiction's progress in implementing plans and diversion mandates. Program tracking and analysis will provide information that can be used to help the Board develop effective policies, provide technical assistance, coordinate and disseminate accurate data, and establish programs to assist jurisdictions. In addition, the Board is required to conduct a biennial review of each jurisdiction's SRRE, which will enable the Board to assess each jurisdiction's progress towards meeting the mandated diversion requirements [PRC 41825]. From this assessment, the Board will determine if SRRE programs are being implemented and diversion goals are being met.

Small jurisdictions may gain relief from some of the planning and diversion mandates by petitioning the Board. A jurisdiction may request the Board's approval for a reduction in the mandated diversion goals because of small geographic size or low population density, and small quantity of waste generated. If a jurisdiction is granted a reduction in planning or diversion requirements or both, it is required to report to the Board on its progress in meeting the reduced requirements 90 days from the anniversary of Board approval of the reductions.

Material Salvage Operations- Operations generally located at the landfill or transfer station to reclaim certain materials from waste disposal, such as metals, white goods, furniture, cardboard, etc.

Material Recovery Facilities- Transfer stations or processing centers that are designed to recover for reuse at least 15% of the incoming waste stream.

Construction/Demolition- Programs designed to divert for reuse the material generally associated with construction or demolition projects (eg: concrete, asphalt, wood, etc.)

Buy Back/Drop-Off- California Redemption Value processing centers

Waste Material Bans- A disposal ban on a material which cannot be reused or recycled locally.

Landscaping Options- Landscaping practice that reduce waste and water usage.

Variable Can Rate- Fee scale for garbage collection charged by can size.

Repair/Resale Programs- Repair and /or resale of secondhand or used goods.

Seasonal Programs- (eg: Xmas Tree Collection, Phone Book Collection) The collection for recycling or other use of specific solid waste materials which are generated periodically.

Waste stream Audits- An audit of the solid waste stream which analyses the incoming commodity stream with materials destined for the waste stream, including waste composition and quantity surveys, to determine materials which can be reduced or recycled.

Procurement Guidelines- Procurement or purchasing policies that require product durability or material content be considered.

* THE DEFINITIONS USED ARE BOARD STAFF WORKING DEFINITIONS ONLY.

Accomplishments

- The Board reviewed the preliminary draft CIWMP for Contra Costa County and acted on the final CIWMP. This is the first CIWMP submitted to the Board for consideration. Included in this CIWMP are the Countywide Siting Element and County Summary Plan, and 19 jurisdictions' SRREs, NDFEs, and HHWEs. The Board approved 55 of 59 elements of the CIWMP, and disapproved four cities' SRREs.
- Three petitions for reduction in the waste diversion mandates (Lassen County, City of Colfax, and Inyo County/City of Bishop) were approved by the Board.
- The Board approved a Status Report format for jurisdictions to use in submitting their status of program development and implementation, as required by AB 440.
- The Board adopted emergency regulations to guide local jurisdictions in the preparation of NDFEs and SRREs, as required by AB 2494, AB 3001, and AB 440. Please see Chapter V, Partnerships with Local Governments and Industry, IWM Planning for a more complete discussion of the adopted emergency regulations.
- The Board adopted a policy on the amount of waste material when used as alternative daily cover (ADC) that may be credited for disposal reduction in meeting the 1995 diversion goal of 25 percent. Not more than seven percent can be credited toward meeting the 25 percent diversion goal. In addition, the maximum amount of ADC allowable for disposal reduction at a solid waste facility cannot exceed the amount of soil required for daily cover permitted at the solid waste facility.

Local Assistance

[PRC 40912(a), 40914, and 42540]

Through its Office of Local Assistance, the Board provides general assistance to local governments on solid waste management planning and implementation of cost-effective diversion programs.

Accomplishments

- Board staff distributed 500 media kits to local jurisdictions as public education tools for a yearlong waste prevention campaign, and provided hands-on training on how best to use the kit materials. The kits were designed to assist local jurisdictions in meeting the state's waste reduction mandates.
- To save local jurisdictions time and money in complying with statutory and regulatory requirements, the Board has completed or is completing several planning models. To guide counties and regional agencies in the preparation of CIWMPs, three models have been developed.

  1. A Model NDFE, which can assist a jurisdiction by providing a sample description of the diversion facilities a jurisdiction currently uses or may use to comply with the diversion requirements.
  2. A Model Countywide/Regionwide Siting Element, which can assist a jurisdiction in siting potential solid waste facilities by providing examples of siting criteria and methodology, different types and sizes of solid waste facilities, and site locations and surrounding land use; and by providing contingency strategies for complying with the 15-year disposal capacity requirement.
  3. A Model Summary Plan, which is intended to assist counties or regions in summarizing diversion programs, and analyzing the waste management practices and issues in the region.

- To help rural jurisdictions comply with requirements of the IWM Act, while minimizing the costs incurred in achieving the waste diversion mandates, Board staff is completing a "Rural Cookbook." This "cookbook" includes recipes for successful rural waste diversion programs. Rural jurisdictions can select programs for implementation knowing that such programs have proven effective in other rural communities. In addition, the Rural Cookbook identifies contacts and resources that may be helpful in implementing these programs. The cookbook will be distributed to 34 rural counties in spring 1994.

- A new publication, *Infocycling*, was developed by the Board. *Infocycling* is a quarterly memo targeted primarily at city and county employees responsible for planning, funding, implementing, monitoring and evaluating IWM Act programs. The information-sharing memo contains pertinent information on various Board programs and goals, as well as providing a means for networking with one another. *Infocycling* is distributed to all local jurisdictions. To obtain a copy, please see the Publications List, Appendix D, News for further information.
- The Board approved criteria to be used by the Board and jurisdictions in determining the adequacy of the content of the elements and plans submitted by local jurisdictions.

Waste Stream and Diversion Tracking
[PRC 40901]

Each California jurisdiction is required to include a Solid Waste Generation Study (SWGS) as part of its SRRE [PRC 40901]. A SWGS quantifies all solid waste generated by a city, county, city and county, or regional agency. The solid waste generated by a jurisdiction is equal to the quantity of solid waste disposed, plus the solid waste diverted by the jurisdiction. During 1994, the Board is scheduled to receive for review the final SRREs prepared by California's 531 jurisdictions. Data provided in the final SWGSs will enable the Board to update its statewide waste stream database.

Information contained in SWGSs enables jurisdictions to target specific waste types for potential diversion programs and to monitor changes in the waste stream from implementation of those programs. The recycling and composting industries use waste generation information in planning business operations, marketing materials, and locating recycling and composting facilities.

As part of the SRRE, jurisdictions must include information on diversion programs they have implemented and a schedule for diversion programs planned for implementation. Information on the SRRE diversion programs is entered into the Diversion Program Tracking Database (DPTD) to track implementation of these programs. The information contained in the DPTD will be updated as final SRREs are received and local Annual Reports are submitted each year, subsequent to approval of the jurisdictions' SRREs. The Board will use the DPTD to determine whether jurisdictions have implemented the diversion programs included in their SRREs.

Accomplishments

- The Board updated the waste stream database as draft SRREs were received in 1993.
- The DPTD was updated with information from draft SRREs received in 1993.

Plan Conformance Findings
[PRC 44009, 50000, 50000.5]

The Board reviews permits for new or expanded solid waste facilities to determine whether issuance of the permit will prevent or substantially impair the jurisdiction's achievement of the waste diversion mandates. Results of the Board's review is a "conformance finding." The Board's conformance review of Solid Waste Facilities Permits ensures that the public has had an adequate opportunity to participate in the facility siting process or facility expansion process, and that the facilities will not impede waste diversion.

DIVERSION PROGRAMS

Outreach Materials
[PRC 42600(a)-(f)]

To assist local governments in achieving the waste diversion mandates, the Board has developed statewide public information and education programs to encourage participation in waste diversion activities by the general public, business, government, and industry.

Accomplishments

- The Board initiated a Back-to-School promotion to advertise the many ways waste can be reduced when sending kids back to school, including the purchase of recycled school supplies.
- "How To" guides were developed for California businesses, including: *Waste Reduction for Business and Industry*, a brochure; and *Don't Throw Your Profits Out With Your Trash*, a fact sheet on successful business waste reduction programs. The guides were distributed to businesses, local government staff, trade associations, and chambers of

commerce. Future publications planned include: a business solid waste reduction manual; various material-specific fact sheets, such as for sewage sludge, fluorescent tubes, and metallic discards; and industry-specific fact sheets (i.e., for offices, retail stores, and restaurants). To obtain copies of the guides, please see the Publications List, Appendix D, Waste Prevention for further information.

- More than 50 different reports and other publications were developed and distributed in 1993. The Board published: general information brochures; newsletters; brochures in English and Spanish; numerous fact sheets targeted at business and industry; resource guides and manuals; videos; and pamphlets on a variety of IWM topics. The Board is also engaged in cooperative efforts with business, government, and industry to develop informational materials for various audiences. Please see the Publications List, Appendix D for further information on Board publications.

CALMAX (California Materials Exchange) [PRC 42600(a)]

The Board is promoting waste handling practices that reduce waste generation by businesses and industries through its California Materials Exchange (CALMAX) program. Initiated in 1991, CALMAX is a free, bimonthly classified listings catalog of nonhazardous "waste" materials designed to help business, industry, and institutions find markets for exchanging materials traditionally discarded. CALMAX serves as a communications network for trading inexpensive or free materials, and brings reusers, recyclers, and waste generators together to simultaneously create new markets and reduce waste. Please see Chapter I, Waste Prevention (Source Reduction), CALMAX for a complete discussion of CALMAX and the Board's accomplishments.

Project Recycle [PCC 12164.5-12165, PRC 42560-42563, EXECUTIVE ORDER W-7-91]

Project Recycle is a Board program to reduce the amount of waste State facilities generate and discard. This comprehensive program implements waste prevention, reuse, and recycling programs at State-owned and leased facilities. The goal is to divert as large a quantity of material as possible from State facilities' waste streams while setting an example for other public and private institutions.

Project Recycle is mandated by PPC 12164.5 and 12165, which require the Board to use the State waste paper collection program as a model to develop a plan to recycle other waste materials generated by State and legislative employees. The Board is required to provide for the recycling of corrugated cardboard, newsprint, beverage containers, waste oil, and any other materials at the discretion of the Board. In addition, PRC 42560-42562 require the Board to provide recycling containers to State facilities for the collection of white paper. The Board is also required to provide training to State employees and public information for the reinforcement of the high grade white office paper recovery program. Executive Order W-7-91 requires the Board to assist State agencies in providing for the collection and recycling of all recyclable materials. In addition, the Board is required to conduct waste audits at work sites to determine the presence of other wastes that could be recycled.

Through Project Recycle, the Board coordinates more than 560 waste reduction programs, including programs in offices, prisons, developmental centers, State hospitals, universities, State parks, and maintenance facilities. The Board provides for the collection of all recyclable materials, implementing waste prevention techniques, conducting waste audits, assisting in the procurement of supplies made with recycled-content material, and training staff from state facilities on the importance of recycling and waste prevention. To allow for the greatest diversion of materials from State facilities, Board staff is targeting those facilities with the largest number of employees.

Accomplishments

- The amount of recyclable materials collected from State agencies increased from 10,677 tons in 1992, to 15,469 tons in 1993. This represents more than a 45-percent increase. The largest single type of material collected was mixed waste paper at 3,650 tons. The second largest was corrugated cardboard at just under 4,309 tons. Other office paper collected was white ledger at 1,976 tons and colored ledger at 999 tons. Other materials

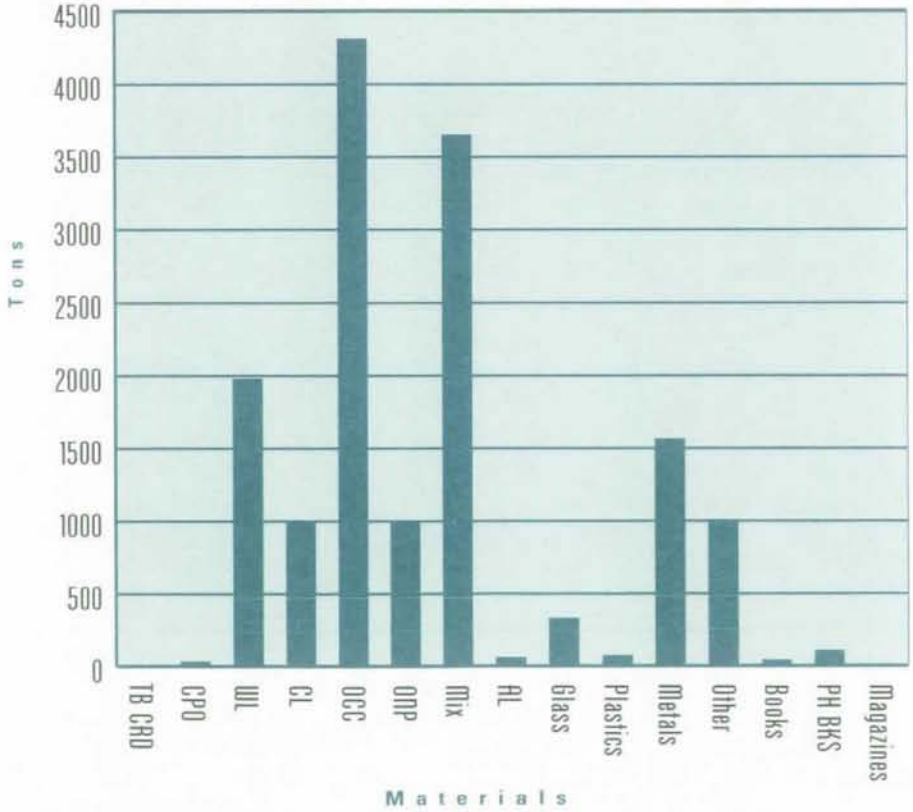
collected included laser toner cartridges (LTC), tires, chipboard, clothing and rags, mattresses, wood, oil filters, eggboxes, license plates, binders, antifreeze, coated sulfite paper, and animal feedbags. (See Figure III-2a.)

- The number of recycling programs at state facilities increased from 480 to 560. (See Figure III-2b, Page 44)
- The Board provided for the collection of recyclable materials: 2,616 (20 gallon) metal recycling containers; 21,532 cardboard desktop recycling containers; and 632 polypropylene bags and 200 stands for the polypropylene bags.

Project Recycle

Materials Recycled For Calendar Year 1993

Total Tons = 15,469



AL= Aluminum
Books= Book stock, hard or soft cover, glued, laminated, stitched or spiral bindings
CL= Colored ledger (plastel color bond)
CPO= Computer printout (fanfold, pinfed, may have colored bars)
Metals= Miscellaneous metals
Mix= Mixed paper (all grades mixed together, but no goldenrod, bound books, or carbon paper)
OCC= Old corrugated containers (must have 3 layers with wavy middle layer)
ONP= Old newspapers, including all inserts, plus legislative bills
PH BKS= Telephone books
TB CRD= Tab cards (manila IBM cards)
WL= White ledger (white bond)

Figure III-2a

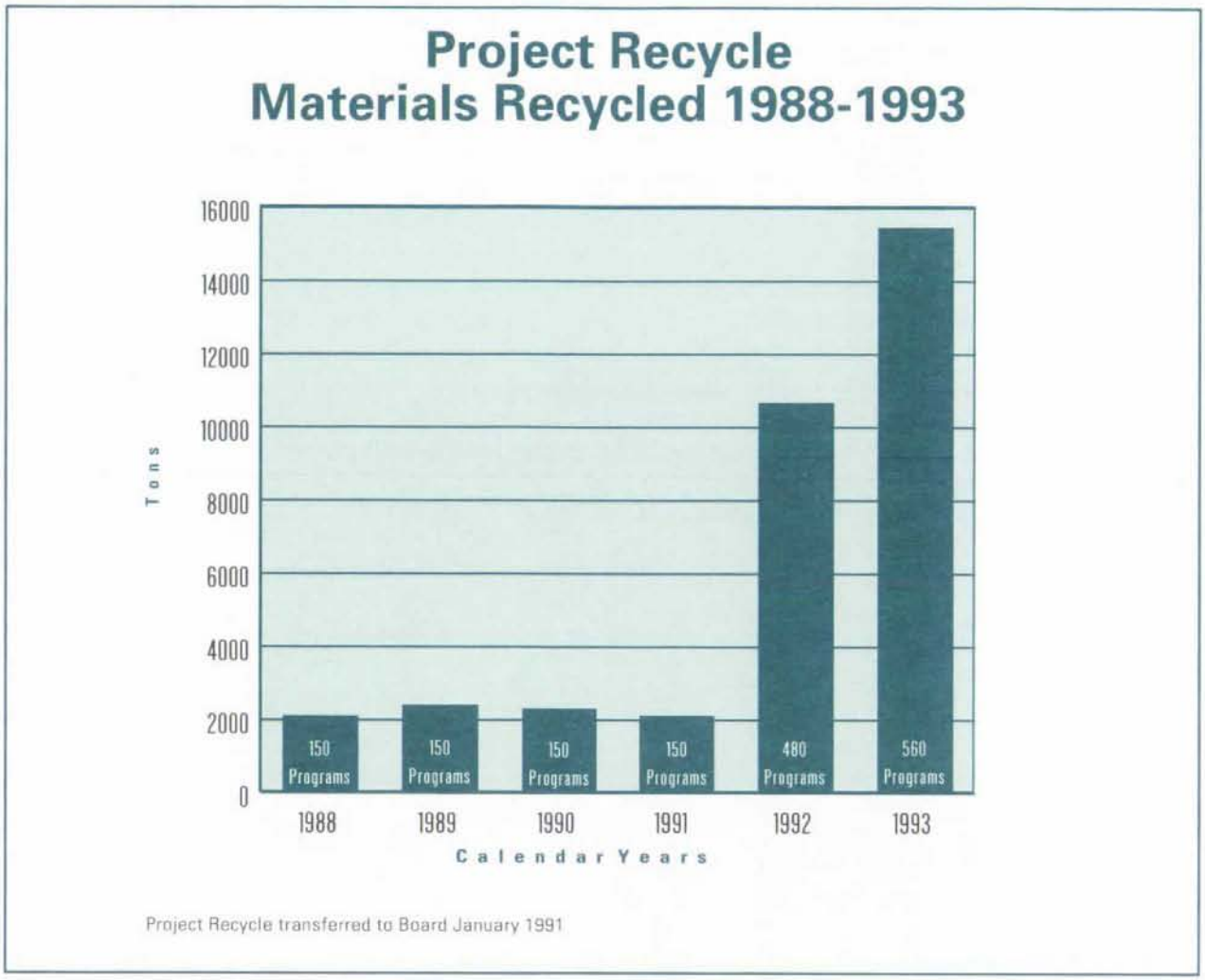


Figure III-2b

- To facilitate the collection of beverage containers from State buildings, the Board provided 1,000 metal recycling containers to the Sacramento Local Conservation Corps.
- To recycle LTCs, the Board augmented an existing contract with DGS, Office of Information Services. The contract allows State personnel to recycle their spent LTCs by placing the used LTC in the box that contains the new LTC. A mailing label is provided for sending the spent LTC to the contractor for recycling. After the contractor receives more than 350 spent LTCs, the Board will receive $7 per LTC.
- Board staff is working with prisons, youth authorities, and developmental centers, where as many as 8,000 milk cartons are generated every day in the larger facilities, to recycled milk cartons.
- Two telephone directory recycling programs were implemented by Board staff, one in Sacramento, the other in Los Angeles. In Sacramento, more than 119 tons were collected and recycled. In Los Angeles, which had a much shorter collection period, about 10 tons were collected and recycled.
- The Board provided technical assistance to four at California universities (University of California Los Angeles, California State University (CSU) San Francisco, CSU San Marcos, and CSU Humboldt) as part of its

model university recycling program. The Board contracted with each of the four universities to complete waste audits, identify source reduction and recycled product procurement possibilities, and implement recycling programs. In addition to technical assistance, the Board provided $25,000 to each campus. Campuses will provide final reports detailing program implementation, campus waste reduction guides, and at least one how-to video for use by other colleges, universities, and large facilities.

- Board staff worked with the Franchise Tax Board to reuse 40,000 plastic file boxes and several desks and metal shelves. The file boxes were provided to school districts, libraries, other state agencies, and city recycling programs. The desks were provided to school districts and were very much appreciated.
- To promote Project Recycle, the Board developed a video, brochure, poster, fact sheet, and a *Pocket Guide to Recycling*. This material was distributed to State offices and recycling coordinators. The Board also publishes a *Project Recycle Update* to inform State workers of the State's recycling program. Articles in the update range from an account of the amount of materials recycled to features on State employees who have made a difference in their recycling program. The quarterly update is distributed to facilities with recycling programs. To obtain a copy, please see the Publications List, Appendix D, Recycling for further information.
- The Board upgraded its in-house recycling program from recycling white ledger paper to recycling mixed waste paper, magazines, newspaper, aluminum cans, PETE, glass, and corrugated cardboard. A *Pocket Guide to Recycling* was provided to staff. The Board's in-house recycling program serves as a model for other State facilities.
- A progress report on the implementation of Executive Order W-7-91, *Evaluation of the State of California's Recycling Program Fiscal Year 1992/93*, was completed. To obtain a copy, please see the Publications List, Appendix D, Recycling for further information.

School Model Programs
[PRC 42620-42623]

The Board is developing and implementing a waste prevention (source reduction) and recycling program for school districts. Please see Chapter I, Waste Prevention (Source Reduction), Case Studies/Demonstration Projects for a complete discussion of the School Model Programs and the Board's accomplishments.

Nonyard Wood Waste
[PRC 42510-42512]

In keeping with the waste management hierarchy, the Board provides assistance to cities and counties in diverting wood waste from disposal. Wood waste that cannot feasibly be reduced, recycled, or composted is directed toward use as a fuel resource for a biomass facility; a biomass facility burns organic material to produce energy. Currently, there are approximately 60 facilities in California permitted to use wood waste as a fuel resource. Nearly half of these facilities operate to produce steam for manufacturing purposes and electricity (cogeneration facilities); the remainder produce only electricity.

To provide meaningful information to local governments, wood waste fuel processors, and biomass facilities, the Board has assessed available information on the quantity and character of wood waste; reviewed and evaluated existing reports; researched emerging technologies that use wood waste as a fiber feedstock; and identified information needs for future investigations. The Board will complete a report by December 1, 1994, on the quantification of wood waste diverted from landfills, as well as provide a detailed analysis of the environmental and economic implications of promoting or discouraging wood waste diversion from landfills.

Accomplishments

- The Board revised last year's wood waste diversion resource guide. This guide: outlines options for recovering wood from the waste stream; provides a comprehensive listing of California wood processors; and lists biomass facilities permitted to accept wood waste. The Board anticipates updating the guide annually to accommodate changes in

the industry. To obtain a copy of the revised guide, please see the Publications List, Appendix D, Wood Waste for further information.

Compost [PRC 42540]

Compost is a product resulting from the controlled biological decomposition of organic wastes separated from the municipal solid waste stream. Potentially compostable organic materials constitute about two-thirds of the California waste stream. The percentage of compostables in the total municipal waste stream is approximately: 28 percent paper; 15 percent yard trimmings; 9 percent wood waste; 7 percent food; and 7 percent other organic material.

The Board provides large-scale composting implementation assistance to cities and counties, including: facility location analysis; technology review; regulatory advice; market information; and general industry networking. The Board also has several research and development projects that relate to compost. Please see Chapter II, Markets for Recyclable Materials, Public/Private "Buy Recycled" Procurement and Research and Development Program.

Recognizing the significant role that home composting can play in an overall waste reduction program, the Board has actively promoted the home management of organic wastes through the development of written material, the production of educational home composting videos, and the distribution of existing books on the subject. A composting video was distributed to local governments for their use as part of the Board's statewide waste prevention campaign. For a more complete discussion of the Board's home composting efforts, please see Chapter I, Waste Prevention (Source Reduction), Yard Waste Prevention.

Accomplishments

- The Board developed and maintains listings of known composting operations to assist State and local governments in networking with the emerging composting industry. This information also helps State agencies comply with state compost procurement mandates.

Used Oil [PRC 48600-48691]

Californians purchased 229 million gallons of lubricating and industrial oil from October 1992 to September 1993. Of the 229 million gallons sold, approximately 130 million gallons of used oil and industrial oil are estimated to have been generated (available for recycling after use) in California. For the same period, 74 million gallons of used oil were collected and recycled, or used as fuel. Used oil is managed as a hazardous waste in California. Solid waste landfills are prohibited from accepting used oil for disposal because the facilities are neither designed nor permitted to manage hazardous wastes. Up to one million gallons of contaminated used oil are estimated to have been disposed of as hazardous waste. The balance of used oil may have been inadvertently disposed of at solid waste landfills, dumped in remote areas, or poured into storm drains that could directly discharge into California waterways.

To address the long-term problems associated with used oil, the California Oil Recycling Enhancement (ORE) Act was passed by the Legislature and became effective January 1, 1992. The Board collects fees (four cents per quart) from oil manufacturers for the sale, transfer, or importation of lubricating oil to fund activities that discourage the illegal disposal of used oil through recycling. The Board's used oil recycling program, which promotes and develops alternatives to the illegal disposal of used oil, includes:

- a recycling incentive fee system (deposit/return);
- establishment of block grants for implementation of used oil programs. The Board is authorized to issue grants to city and county governments totalling a minimum of $10 million annually. The grants are awarded on a noncompetitive, per capita basis. The money is to be used for implementation and operation of used oil collection programs. See Chapter V, Partnerships with Local Government and Industry, Used Oil Funding Assistance for a discussion of used oil funding assistance (grants) and the Board's accomplishments;
- development and implementation of an information and education program for the promotion of alternatives to illegal disposal of used oil;

- an oil sales and used oil tracking and reporting system;
- a reporting, monitoring, and enforcement program to ensure that all statutes and regulations relating to used oil are properly implemented;
- certification and inspection of used oil collection centers;
- registration of used oil collection programs and industrial generators; and
- certification of used oil processing, recycling, and re-refining facilities.

As required by statute, the program began in two phases. Beginning October 1, 1992, oil manufacturers were required to pay the Board four cents per quart of lubricating oil sold, transferred, or imported into California. On April 1, 1993, the Board began paying a recycling incentive fee (four cents per quart of recovered oil) to certified used oil collection centers, registered industrial generators, curbside collection programs, and electrical utilities.

A significant amount of used lubricating oil remains uncollected and is not recycled. Fear of accepting contaminated oil and associated liabilities have been identified as significant barriers to the establishment of oil collection services or centers. Alleviating this concern would result in a substantial increase in the quantities collected and recycled. The Board is reviewing available information to determine the hazardous constituents of used oil. This information will be used in educational materials for the general public, collection centers and curbside programs. The Board is also expanding its efforts to increase public awareness and participation, as well as assisting in the development of new technologies to maximize the quantities of used oil collected and ultimately recycled.

The State Department of Finance (DOF) has begun an accounting audit of the Used Oil Recycling Fund and is assisting Board staff in identifying fraud. DOF's audit results and recommendations will be included in the Board's 1994 Annual Report.

Accomplishments

- Beginning April 1, 1993, the Board paid a recycling incentive fee of four cents for every quart of lubricating oil recovered to certified used oil collection centers, industrial generators, curbside collection programs, and electrical utilities.
- As of December 31, 1993, 140 used oil collection centers were certified; and 164 industrial generators, 34 curbside programs, and 1 electrical utility were registered. As with any new program, marketing and educational efforts are likely to result in an increase in the number of participating entities. Staff have developed fact sheets and have conducted workshops and provided training to gain acceptance and promote participation for the new program. The Board anticipates the number of collection centers to increase significantly in 1994; many local jurisdictions are establishing collection centers and curbside programs in order to qualify for block grant funds.
- Board staff certified 10 used oil recycling facilities based on State Department of Toxic Substances Control (DTSC) annual inspection reports. Staff are working in a cooperative effort with DTSC to ensure that facility operations do not pose a threat to the public health and safety or to the environment. In order to participate in the program annually, each facility is required to be recertified. Board staff also reviewed information in 1993, about several out-of-state recycling facilities that may be recipients of California used oil to assure compliance with applicable regulatory standards in those states.
- On February 2, 1993, the Board filed regulations for the Used Oil Recycling Program with the Secretary of State's Office. The regulations specify reporting requirements for oil manufacturers, used oil haulers, and used oil recycling facilities. Regulations relating to certification of recycling facilities and collection centers, registration of industrial generators, curbside collection programs and electric utilities, local government grant programs, and the incentive fee claim process were filed with the Secretary of State's Office on July 6, 1993.

Used Oil Recycling Statistics For The First Full Year Of Operation

(October 1992-September 1993)

Lubricating Oil Sales	139,944,920
Industrial Oil Sales	89,197,235
Total Oil Sales	**229,142,155**
Lubricating Oil Recycled	60,719,303
Industrial Oil Recycled	12,910,384
Total Oil Recycled	**73,629,687**
Unadjusted Recycling Rate	32%
Adjusted Recycling Rate	56%

Figure III-3a

- A used oil program database was developed that maintains the status of an applicant or a facility. This information is used for accounting and auditing purposes, as well as a tool to track the "flow" of used oil. The DTSC has agreed to provide the Board with access to the hazardous waste manifest database which DTSC maintains. The information in the database is helping to verify the incentive fee claims (and subsequent auditing) and track the flow of oil; it will also be used to generate facility profiles and quantify out-of-state transport of used oil.
- The Board developed an educational campaign to inform the public that certified centers will accept oil free of charge. The center locations are easily accessed through the Board's general hotline number. The Board also provided training workshops, as well as disseminated a wide variety of written materials on used oil recycling opportunities. Please see Chapter IV, Public Perceptions and Practices, Used Oil Public Education Campaign for a more detailed discussion of the campaign.
- The Board developed used oil recycling rates based on oil sales figures supplied by oil manufacturers to the Board of Equalization and used oil recycling figures furnished to the Board by certified used oil recycling facilities. During the first year of operation of the Used Oil Recycling Program (October 1, 1992 to September 30, 1993), oil manufacturers sold 229 million gallons of lubricating and industrial oil in California. Used oil recycling facilities recycled 74 million gallons of oil (a recycling rate of 32 percent) from California during the same period (a small amount of California oil is transported out of state for recycling). The 229 million gallons of oil sold consisted of about 140 million gallons of lubricating oil and 89 million gallons of industrial oil. Of the 74 million gallons of oil recycled, used lubricating oil accounted for 61 million gallons and used industrial oil accounted for 13 million gallons, based on recycling facility estimates. (See Figure III-3a.) Figure III-3b, Page 49, depicts the various products made from recycled used oil.

  The recycling rate of 32 percent strictly reflects the amount of oil recycled in California measured against the amount of oil sold during the same period. To account for oil consumed during use, including leakage or burning, adjustment factors have been developed from national studies and studies done by other states for both lubricating and industrial oils. Based on these studies, Board staff estimated that 60 percent of lubricating oil was available for recycling after use and 52 percent of industrial oil was available after use. When these two factors were applied to the lubricating and industrial oil sales totals, the estimated recoverable volume after use is 130 million gallons, resulting in an adjusted recycling rate of 56 percent. If the adjustment factors are accurate for California, 56 percent of the used oil available for recovery was recycled. Further study is needed to determine if the national and state studies apply to California's current generation of used oil.

Metallic Discards [PRC 42160-42185]

After January 1, 1994, no solid waste facility may accept for disposal any major appliance, vehicle, or other metallic discard containing enough metal to be economically feasible to salvage, as determined by the solid waste facility operator. A metallic discard is any large metal article or product, or any part thereof, including metal furniture, machinery, major appliances, electronic products, and wood burning stoves. The purpose of the legislation is to divert large, recyclable materials from landfills, preserving scarce landfill space, as well as natural resources.

Accomplishments

- The Board completed a *Report to the Governor and Legislature on Metallic Discards Management*, which is designed to ensure that the processing of metallic discards and the special materials contained within them is accomplished in an environmentally safe manner. The report specifies how the removal of special materials (CFCs, PCBs, sodium azide, and other materials regulated by the DTSC) should be financed and administered. The report recommends the formation of a task force to assist Board staff in: developing literature on the proper processing of metallic discards; examining the need for funding for the removal of special materials from metallic discards and exploring potential funding mechanisms; and addressing issues associated with other special materials. The report also recommends that Board staff advise the Board on the effectiveness of the January 1, 1994 ban one year following its implementation. To obtain a copy, please see the Publications List, Appendix D, Special Wastes for further information.
- The Board established the Metallic Discards Task Force. The task force consists of 17 members representing the regulatory, environmental, industrial, and public sectors. The task force will meet for a one-year period beginning January 1, 1994. (See above accomplishment for a description of the task force's role.)

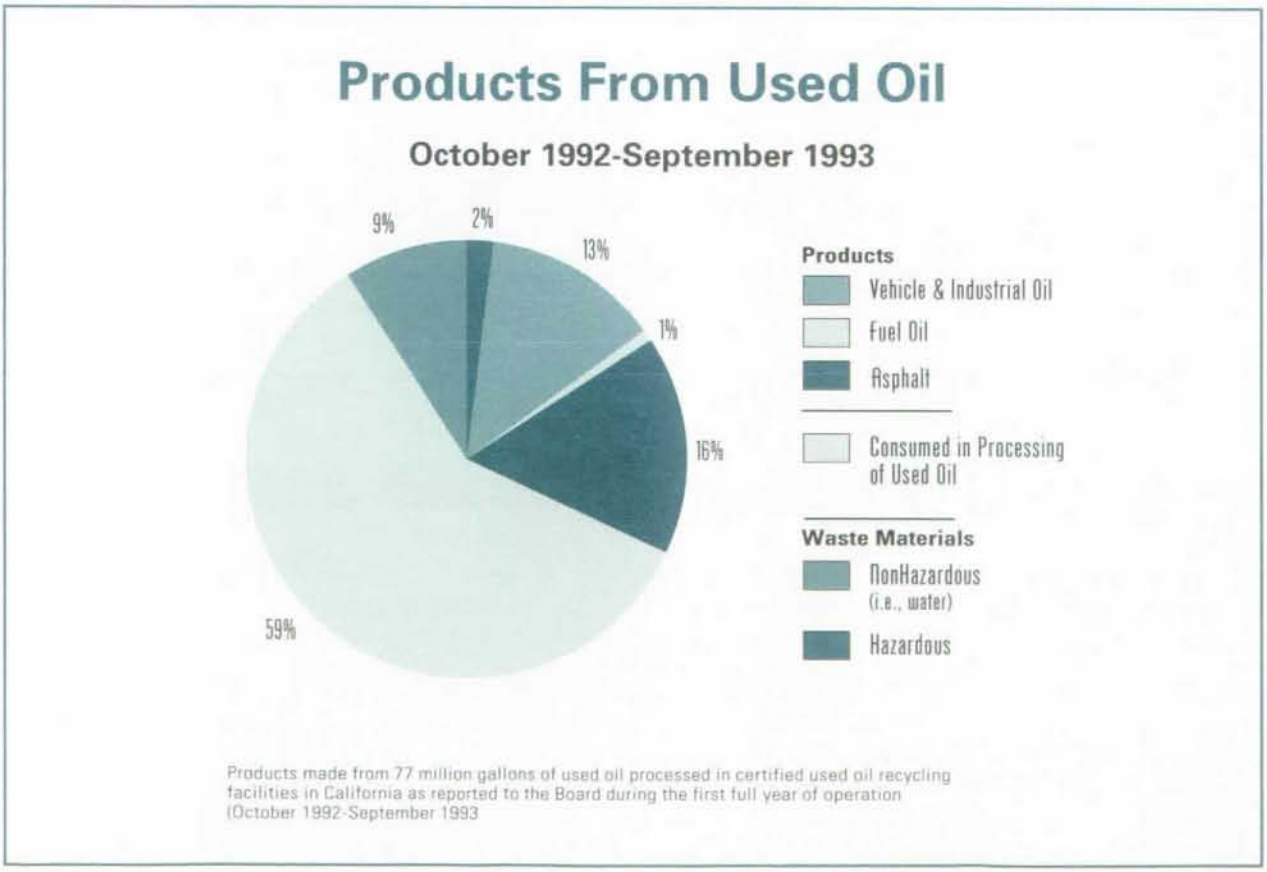


Figure III-3b

Sewage Sludge [PRC 41781 and 41781.1]

Nearly two-thirds of the 375,000 dry tons of nonhazardous municipal sewage sludge generated annually in California is disposed of in landfills. Initially, the IWM Act stipulated that sludge diverted from landfills could not be credited toward waste diversion goals. However, the status of sludge was changed by AB 1520 by Assemblymember Sher (Chapter 718, Stats. 1991). Effective July 1, 1992, sewage sludge could be credited as waste diversion. Additionally, on February 19, 1993, the federal government promulgated regulations 40 Code of Federal Regulations (CFR) part 503, which dictate pollution limitations and management practices for the beneficial reuse of sewage sludge.

As a result, the Board has initiated a program to evaluate local jurisdictions' applications for diversion credit and determine if the proposals are in compliance with state and federal regulations and policies, and if so, approve them. Prior to making its determination, the Board is required to: 1) make a finding at a public hearing that the sludge has been adequately analyzed and will not pose a threat to public health or the environment; and 2) consult with, and obtain the concurrence of, the following agencies: the State Water Resources Control Board (SWRCB), the California Regional Water Quality Control Board (RWQCB), the State Department of Health Services (DHS), the State Air Resources Board (ARB), and the DTSC.

Accomplishments

- To assist local jurisdictions in obtaining diversion credit for sludge, the Board developed emergency regulations that define specific procedures and criteria for obtaining approval.
- A report was completed that evaluates sludge quality, quantity, and disposal practices from 32 publicly-operated treatment works in California, and compares the State's current regulatory oversight of sewage sludge to the minimum requirements contained in the federal regulations. This information will provide a basis for making decisions in the Sludge Management Program.

RESEARCH AND DEVELOPMENT PROGRAM

[PRC 42650]

As part of the Board's comprehensive Research and Development Program, Board staff conduct research to overcome technological barriers to expanded uses of recycled materials and compost products and to assist in implementing innovative resource management and waste reduction programs.

Anaerobic Digestion Research Program

Mixed residential municipal solid waste (MSW) is one of the more difficult waste streams to utilize beneficially. One method of using mixed MSW is to allow microbes to "digest" MSW in an anaerobic (i.e., oxygen-starved) digestion unit, which produces both methane gas, useful for energy production, and compost. To develop this method, the Board contracted in 1992, with the State's Prison Industry Authority (PIA) office at Folsom and the University of California at Davis to conduct several studies related to technologies and markets for anaerobically-digested MSW and its by-products. In 1993, PIA and the City of Folsom opened their new material recovery facility for sorting MSW (called the California Resource Recovery Facility, CRRF). Organic waste from this facility will be used in a large-scale anaerobic digester when construction of the digester is completed.

Additional studies include:

- a characterization of the digestion process, the compost, and biogasses of mixed MSW and source-separated green waste;
- analysis of heavy metals in MSW-originated compost for commercial compost use; and
- analysis of nutrient deficiencies for the composting process in paper sludges from paper mills.

Accomplishments

- The Board funded a Learning Laboratory at CRRF for government officials and employees to learn how a material recovery facility operates.

IV. Public Perceptions and Practices

Public perceptions and practices play a critical role in maximizing waste prevention and diversion. The Board is investing considerable resources in education efforts designed to enlighten the public about sound resource conservation practices, as well as the economic and environmental costs of waste disposal. Through its public information and education programs, the Board is working to change the public's daily habits and routines, and to influence the decision-making processes of businesses and local government so that they reflect an awareness of the environmental consequences of excessive waste generation. The Board's challenge continues to be to motivate Californians to change wasteful practices to resourceful ones.

EDUCATING THE PUBLIC

[PRC 42600, 42602]

With a population of more than 31 million generating nearly 45 million tons of garbage each year, taking every opportunity to inform Californians about waste prevention is essential. By helping the public make informed decisions about their purchases and the waste they create, the Board can help decrease reliance on landfills and preserve remaining capacity.

In 1993, the Board achieved much success in working with the media to get its waste prevention and diversion message out. The Board's research indicates that the public is hungry for information that heightens awareness and provides information on the techniques and options available. Californians were informed about such diverse topics as market development, waste tires, used oil, composting, and waste prevention.

Increasingly, the media looks to the Board as the primary authority on integrated waste management (IWM). Facts and figures derived from the Board's database on waste generation (which can be sorted by city, county or by state) are provided on request. These waste reports have been well received and are often used as the basis for charts and graphs accompanying local and national articles.

Many local recycling coordinators have used ready-made templates distributed in media kits as a part of the Board's waste prevention awareness campaign. These templates enable them to get their message of waste prevention to the public quickly and easily. For a detailed discussion of the media kits, please refer to Public Education Tools for Local Government later in this chapter.

Accomplishments

- Approximately 175 information releases on Board programs were distributed to various daily newspapers and trade journals throughout the state and nation, as well as to television and radio stations throughout the state.
- More than 250 articles were written about the Board and its programs, resulting in additional inquiries by the press and public.
- The Board's "Buy Recycled" display was exhibited at numerous events throughout California to educate the public on how postconsumer waste is transformed into new and useful products. The display provides consumers with information on how and where to purchase recycled products. Products are obtained, cataloged, documented, and added to the display on an ongoing basis. A fact sheet was developed to familiarize the public with products in the Buy Recycled display. Numerous events included: the California Resource and Recycling Association conference, the Business and the Earth conference, the Shasta District Fair, and various city and county workshops.

Public reaction to the display is often amazement at not only the variety of uses for recycled materials but also the quality of recycled-content products.

PUBLIC EDUCATION PRIORITIES

[PRC 40507(e)]

Through its strategic planning process, the Board recognized the critical role education plays in IWM. The Board's priorities in education are based on a variety of external factors — the public's lack of awareness of the costs associated with waste management and a tendency to rely on recycling as the single solution to waste management, to name just two. On the positive side, however, the public's willingness to help solve the waste problem, combined with the growing recognition by consumers and the private sector of the economic benefits of waste reduction, provide the motivation needed for a change in behavior.

The Board's priorities in education include:

- increased public participation in resource conservation practices, as measured in surveys;
- creating public awareness of the full cost of solid waste disposal;
- regular public surveys to determine participation rates in resource conservation practices; and
- coordination of education programs with local government and the private sector, where practical.

Surveys conducted by the Board in 1993, reveal that Californians do respond to appeals to help reduce, reuse, recycle, and buy recycled. However, Californians' concerns ranked higher on issues related to the economy; the environment is continuing to move away from a "front and center" issue in the minds of Californians. For results of the surveys, please see Chapter I, Waste Prevention (Source Reduction), Statewide Waste Prevention Education and Outreach Campaign.

In view of the limited resources available to the Board for public education and the desire on the part of local government and the private sector to work cooperatively and in partnership with the Board, the following approaches will be considered in 1994:

- an emphasis on education strategies that address waste prevention or recycling of paper and yard waste, two of the largest contributors to landfill space;
- demonstrating the economic benefits of effective strategies for waste prevention, reuse, recycling, and buying recycled;
- an increase in cooperative partnerships between local governments and other allied education partners;
- identification of additional methods for funding of educational efforts statewide; and
- expansion of the Board's information-sharing role with others.

Accomplishments

- Existing Board education activities were assessed and reprioritized to ensure the best utilization of resources to fulfill the general and specific education mandates as follows:

Consumer Education (educating the general public):

- Developed and implemented public service announcements (PSAs) for radio, television, and print media on tips for reducing, reusing, and recycling.

- Made available education materials in Spanish and Chinese for non-English speaking audiences.

- In partnership with the Steel Recycling Institute, assisted with promoting an educational program to recycle steel cans to local governments.

Business Education/Assistance:

- Developed and implemented an awards program that recognizes businesses' contributions to waste prevention and diversion. Please see Chapter I, Waste Prevention (Source Reduction) for more details regarding the Waste Reduction Awards Program and its accomplishments.

Diversion:

- Developed "how-to" guides for business and industry sectors designed to assist in establishing and maintaining diversion programs.

Pollution Prevention Education:

- Developed education programs designed to minimize pollution caused by improper disposal of household hazardous waste and used oil through the Board's Used Oil and Household Hazardous Waste programs. These programs are discussed later in this chapter.

Waste Prevention Education:

- Developed quarterly promotions on IWM.

- Established a Waste Prevention Clearinghouse for information on waste prevention activities. Please see Chapter I, Waste Prevention (Source Reduction) for more detail regarding the Clearinghouse and its accomplishments.

PUBLIC EDUCATION TOOLS FOR LOCAL GOVERNMENTS

(PRC 42600-42602)

As part of its statewide waste prevention campaign, the Board developed a media kit for distribution to all cities and counties. The kit gives communities public education tools for a yearlong waste prevention campaign. Designed to help local governments meet the state's waste reduction mandates, kit components include:

Figure IV-1a Sample ad

- a binder with step-by-step instructions for all materials;
- PSAs for radio and television on issues such as waste reduction, composting, excess packaging, and illegal dumping;
- camera-ready ads and brochures (see Figure IV-1a for a sample ad);
- educational videos on composting, and business source reduction;
- artwork for garbage truck placards or bumper stickers; (see Figure IV-1b for a sample placard);

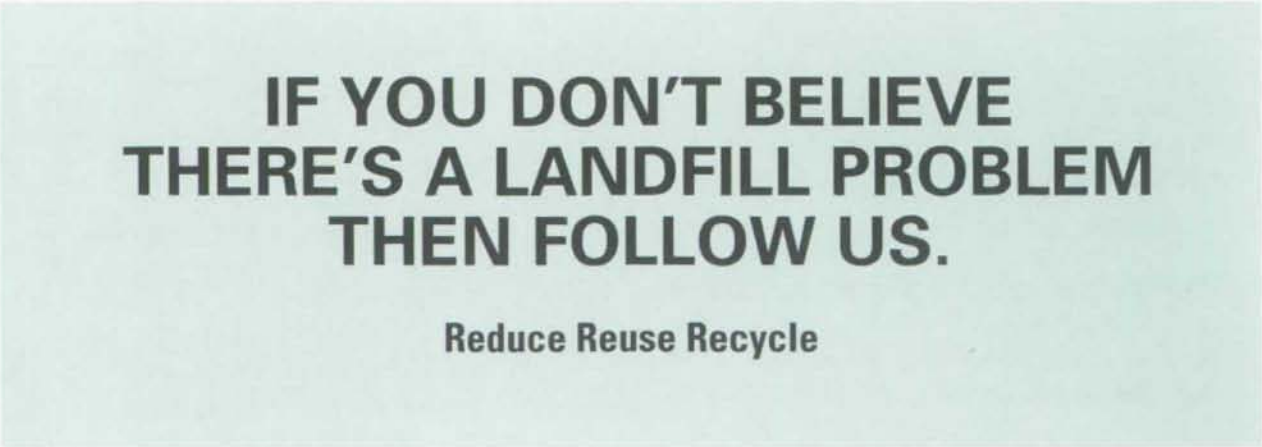


Figure IV-1b Garbage Truck Placard

- household hazardous waste fact sheets in English and Spanish; and
- a "how-to" list of media relations.

More than 500 media kits were distributed to local governments in the state and hands-on training was provided on how best to use the kit materials. A survey is being conducted to determine the kit's effectiveness in meeting local governments' needs and to identify other materials/promotions that the Board could develop to assist in public education efforts. Initial results show that local governments found camera-ready artwork (brochures and print ads) the most useful; there also is a need for printed materials in other languages, such as Spanish and Chinese.

In concert with the promotions outlined in the media kit's binder, the Board initiated two promotions designed to provide a media presence throughout the state, and augment whatever local ideas may be implemented: Back-to-School and "No Waste Holiday."

The objective of the Back-to-School promotion is to advertise the many ways waste can be prevented when sending kids back to school. This multilevel effort includes: a tour of daytime television and radio talk shows; feature stories in major newspapers on reusable and recycled school supplies; press releases to all major media; and on-air radio announcements and contests conducted by morning drive-time disk jockeys.

The No Waste Holiday promotion advocates simple techniques to reduce the amount of trash generated during the Christmas and Hanukkah seasons. Gift givers are encouraged to wrap presents with usable gifts instead of disposable paper; scarves, hat and tool boxes, backpacks, tablecloths and lace are just a few of the "gift" wrapping ideas that create no waste. Outreach to all media markets — radio, television, and print — is being conducted.

Accomplishments

- The Board received first prize in the American Advertising Federation's "Best of the West Awards" competition in the category of best television PSA series for three commercials produced for the Board's statewide waste prevention campaign; the Board's "grocery cart" spot, also part of the statewide campaign, was chosen as the best single television commercial.
- The Board received an Award of Merit from the National Association of Professional Environmental Communicators in the Public Sector Communications Programs category for its waste prevention communication program.
- An Award of Merit was also received from the International Teleproduction Society for the composting video "Taking Care of Your Own - Composting for the 90s." This video was listed as one of the top three best directed videos in the noncommercial/information category.

EDUCATING SCHOOL CHILDREN [PRC 42603]

Education on environmental issues has become more important at the K-12 level and the quantity of materials available to teachers has also grown extensively. Individuals, agencies, and institutions have published curricula of varying quality and value to teachers, and selecting the best and most valuable materials has become a challenge for California's educators. The Board is directing its school education program to provide comprehensive, focused, and accurate educational materials to educators, and to train these educators in use of the materials.

Accomplishments

- The *Compendium for Integrated Waste Management* was published by the Board, in cooperation with the State Department of Toxic Substances Control (DTSC) and the State Department of Education (CDE). The compendium is a resource guide for identifying the top curricula in the areas of hazardous and nonhazardous waste. Additionally, the compendium provides direction for future curricula development by clearly defining the parameters of quality waste management educational materials as they relate to California education standards and state-of-the-art IWM concepts. The compendium was published after a review of educational materials gathered in a nationwide search. The review was conducted by 24 of California's top environmental educators who extensively evaluated more than 150 curricula for hazardous and solid waste content, alignment with California's educational

frameworks, and state-of-the-art educational techniques. A copy of the compendium was sent to all K-12 public schools, school districts, County Offices of Education, and city and county recycling coordinators in California. Publishers and curriculum developers also were given access to the compendium. To obtain a copy of the compendium, please see the Publications List, Appendix D, Educational Materials for further information.

This project not only identified quality IWM curricula, it also identified important trends in waste management curricula. These trends are being used to continually refocus the Board's efforts to the areas of greatest need. For example:

- Few quality materials are available at the K-3 and 10-12 grade levels.
- Several exemplary materials were found at the 4-6 grade level.
- Few materials were available in languages other than English.
- Recycling was emphasized over waste prevention.
- "Closing the loop" (buying recycled products) was given little attention.

Exemplary materials identified in the compendium are currently being reviewed by the Board for adoption and statewide distribution. Materials will be field tested, evaluated, and adapted, if necessary. They will be disseminated through regional teacher trainings in cooperation with CDE.

The compendium project was funded jointly by the Board and DTSC, with a grant from CDE. The combined resources of three state agencies provided a service that individual jurisdictions probably could not afford.

- The compendium received an award for "Excellence in Individual Communications Tools: Printed Materials" from the National Association of Professional Environmental Communicators.

HOTLINE (PRC 3472, 42600)

The success of the Board's public awareness programs has resulted in an increased demand for information about reducing, reusing, recycling, and composting waste. To respond to individual requests for this information, the Board operates a toll-free hotline **(1-800-553-2962)**. The hotline is linked to an electronic database that contains the location of approximately 2,600 recycling centers that accept a variety of materials from the public, including used motor oil, aluminum, plastics, metals, glass, newspaper, cardboard, and other paper products. The database also contains information on upcoming household toxic "roundups" and collection facilities. Dissemination of recycling information is coordinated with other state departments, including the DTSC for hazardous waste and the Department of Conservation for curbside recycling information and certified redemption centers. County contact names and their telephone numbers are included in the database.

The hotline number is listed in California telephone directories, newspaper recycling ads, and recycling guides throughout the state. It operates Monday through Friday, 8:00 a.m. to 5:00 p.m. (See Figure IV-2 for the number and types of calls received.)

Accomplishments

- More than 56,600 calls were answered in 1993, averaging almost 5,000 calls per month.
- A special hotline number **(1-800-CA-WASTE)** was established in 1993, to support its "Smart Shopper" advertising urging the public to call for information on reducing waste and a free Smart Shopper's information kit. More than 3,500 calls and 1,000 newspaper requests were received for the free "Smart Shopper" information kit during the campaign. The ad appeared in various newspapers, television and radio stations, and outdoor billboards from March 1993 through June 1993. The kit consists of information booklets on waste reduction, a cloth shopping bag, a magnetic erasable shopping list, and other waste reduction items. The Smart Shopper kit is currently provided upon request by calling **1-800-CA-WASTE**.

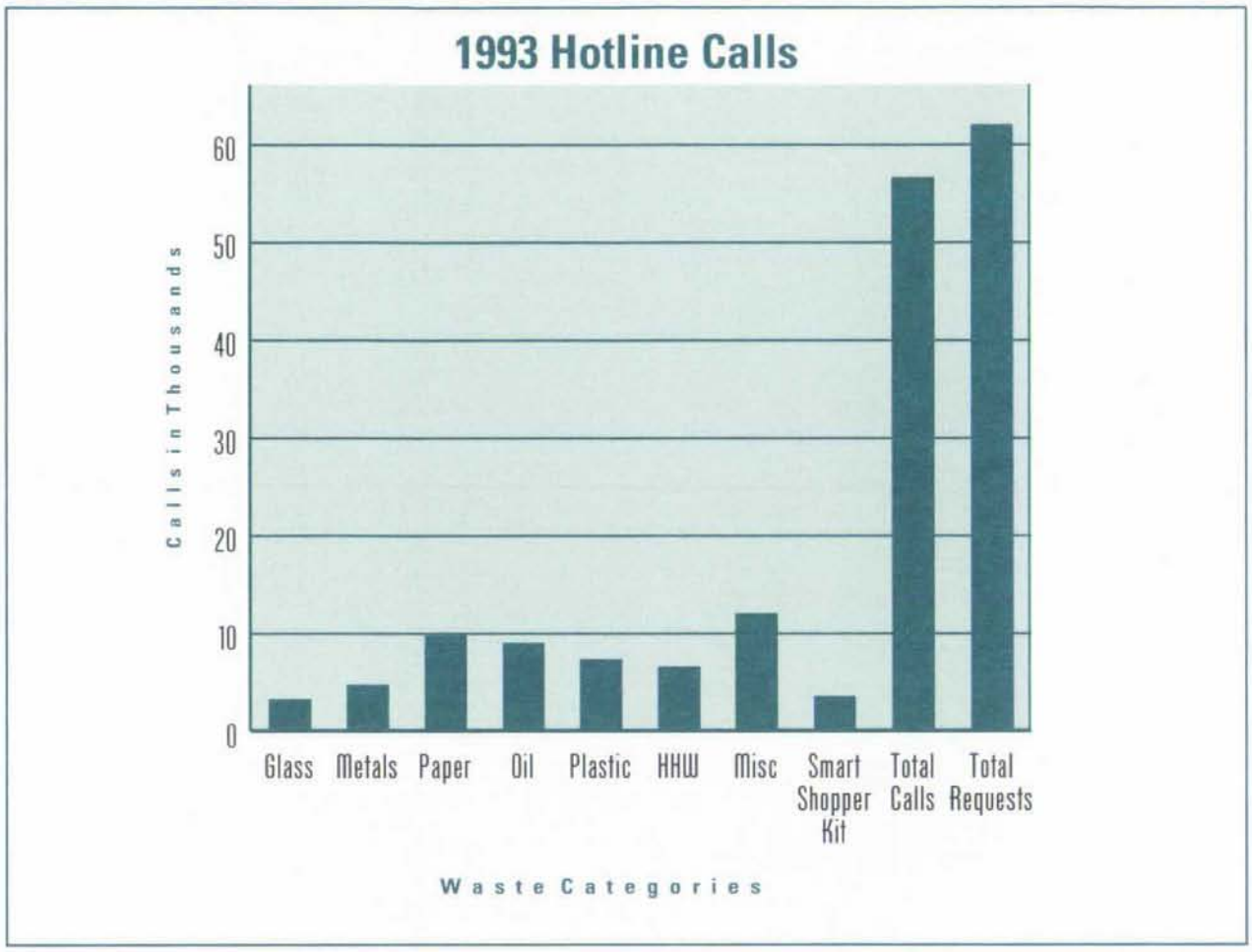


Figure IV-2

USED OIL PUBLIC EDUCATION CAMPAIGN

[PRC 47000-48631, 48691]

California generates more used motor oil than any other state in the United States. Used motor oil can contain carcinogens and other toxic substances. Disposing used oil into waterways, storm drains, or on land harms the environment in many ways; a single gallon of motor oil can contaminate one million gallons of drinking water. To address the long-term problems associated with used oil, the Legislature passed the California Oil Recycling Enhancement (ORE) Act, which became effective January 1, 1992. The primary purpose of the ORE Act is to discourage illegal disposal of used oil and to encourage its recycling. A key component of the ORE Act is development and implementation of an information and education program to promote alternatives to the illegal disposal of used oil. The Board administers the program and is developing a public education campaign. Please see Chapter III, Waste Stream Diversion, Used Oil for a complete discussion of the problems associated with used oil, and Chapter V, Partnerships with Local Governments and Industry for discussion related to used oil funding assistance.

Accomplishments

- The Board contracted with Deen and Black Public Relations to research and design a public education campaign encouraging the proper disposal of used oil in California. The effort was divided into three phases: secondary research, primary research, and planning.

Secondary research: All similar campaigns conducted elsewhere in the United States were reviewed. In this phase, opinion research conducted on the issue nationally was analyzed and what had been done in California was also explored.

The key summary findings of the secondary research are as follows:

- Public education campaigns have been instrumental in other parts of the country in raising awareness of the used oil disposal problem, significantly increasing proper disposal.
- Only eight other states (all are coastal states) have conducted major statewide public education campaigns in this area and all consider their efforts to be successful.
- People who change their own motor oil, called "do-it-yourselfers" for the purpose of this report, are overwhelmingly male, between the ages of 20 and 45.
- The desire to do what is environmentally proper appears to be a strong motivator for proper disposal of used oil; monetary incentives are not. Convenience is a strong factor in determining behavior.

Primary research: Research was initiated in late 1993, to provide the Board with current answers to key questions on the issue of used oil disposal, and specifically on the attitudes and behaviors in California of the do-it-yourselfer oil changer.

This information will serve as a benchmark that will quantify opinion and behavior, making it possible to evaluate the effectiveness of the public education campaign in the future. It will also be instrumental in designing the campaign, identifying such crucial concerns as target audiences, attitudes and opinions, behaviors, awareness of the problem, potential motivators, and potential barriers. Completion of all aspects of the primary research is expected in early 1994.

Planning: The results of the primary research will serve as the basis for developing an implementation plan for a used oil public education program. This will include potential messages and recommendations for dissemination by the appropriate media. The implementation plan is expected to be complete in the spring of 1994.

HOUSEHOLD HAZARDOUS WASTE EDUCATION

[PRC 47050 - 47052]

The Board's Household Hazardous Waste (HHW) program provides important education and public information resources and tools for local jurisdictions to use in eliminating HHW from the waste stream. Public education is considered to be the most economical means of ensuring that solid waste landfills are not adversely impacted by hazardous waste. For a detailed discussion of the Board's HHW program and it accomplishments, please see Chapter V, Partnerships with Local Governments and Industry.

Accomplishments

- Fact sheets are available both in print form and as camera-ready slicks for local governments and the public. The fact sheets include: general information on HHW, aerosols, antifreeze, batteries, latex paint, oil-based paint, and used oil. To obtain a copy of the fact sheets, please see the Publications List, Appendix D, Household Hazardous Waste for further information.
- All materials prepared are presented in both English and Spanish.
- Camera-ready artwork was made available to local governments and private groups to assist in implementing their own public information programs. The artwork depicts examples of HHW, recyclable products, alternatives, and characteristics of HHW.
- A brochure was developed entitled, "When you move...be kind, don't leave it behind!" This brochure is designed to inform the public about what to do with unwanted, hazardous household products when moving. The brochure will be disseminated through the real estate industry in early 1994, and will also be available through the Board's Publications, List Appendix D.

- A coloring book was developed that introduces children in grades K-3 to potentially hazardous products in and around their home. The coloring book also encourages adults to store these items out of the reach of children and to use alternatives to these products. The book is planned to be competed in early 1994. Upon completion, the book will be disseminated at events attended by the Board, e.g., Earth Day and the HHW Information Exchange. The coloring book will also be available through the Board's Publications List, Appendix D.

V. Partnerships with Local Governments and Industry

The responsibility for maximizing waste diversion rests with local governments; however, industry participation is a critical element for success. The Board works in partnership with both of these entities, assisting them in meeting the waste diversion goals established in the California Integrated Waste Management (IWM) Act. In concert with local government and industry, the Board gathers, analyzes, and disseminates information critical to the implementation of the IWM Act. Much of this effort is realized in the development of new regulations and the revision of existing regulations to facilitate local implementation. In addition to the management of information, the Board may utilize resources in the form of grants and funded studies to further the goals of the IWM Act. The Board works in direct partnership with local enforcement agencies (LEA) to enforce statutorily-mandated state standards for the operation of solid waste facilities and to protect public health and safety, as well as the environment.

INFORMATION PARTNERSHIPS

Local Government Technical Advisory Committee [PRC 40700 et seq.]

Local government's responsibilities in meeting the mandates of the IWM Act are integral to the successful implementation of IWM programs in California. In order to accomplish the successful implementation of the state's IWM programs, the Legislature created the Local Government Technical Advisory Committee (SB 487 by Senator Bergeson, Chapter 1106, Stats. 1991) to provide a direct liaison between the Board and local governments, advising the Board on solid waste management planning issues.

With Board staff assistance, the Local Government Technical Advisory Committee met monthly on average during 1993. The topics on which the committee principally focused were implementation of federal Subtitle D landfill criteria and regulations being developed to implement the planning requirements of the IWM Act.

Local Assistance

Through its Office of Local Assistance, the Board provides general assistance to local governments on solid waste management planning and implementation of cost-effective diversion programs. Please see Chapter III, Local IWM Planning, Local Assistance for a discussion of this office's accomplishments.

Plastics Recycling Information Clearinghouse [PRC 42520]

The Board established a Plastics Recycling Information Clearinghouse in 1992, to provide information to postconsumer plastics collectors, reprocessors, and recyclers about programs for collecting postconsumer plastics, availability of postconsumer plastics, and recent advances in postconsumer plastics recycling technology. The clearinghouse helps those interested learn how to start a plastic recycling business; assists students and researchers with information for research projects and the publishing of articles; facilitates communication between buyers and sellers of recycled plastic products; and develops public interest for recycling plastics.

To track rapidly changing information on plastics in the waste stream, the clearinghouse monitors numerous daily newspapers, news services, consumer magazines, trade publications, and scientific journals. The clearinghouse information includes:

- federal and state regulations;
- over 1,000 articles, covering technical and economical aspects on the recycling of plastics;

- bibliographic lists of references, contacts, and sources of information on each item; and
- testing and quality standards for plastic resins and products.

The clearinghouse responds to numerous telephone and letter inquiries from the public throughout the year. An example of the most commonly asked questions include:

> "What type of plastics are recyclable and how can they be identified?"
>
> "Why are there only two kinds of postconsumer plastics being recycled in California?"
>
> "How can a new plastic recycling business be started and where can the recycled plastic material be found?"
>
> "What is better for the environment, paper or plastic, cups or bottles, etc.?"

A question and answer sheet on the most commonly asked questions is currently being developed to assist those interested in recycling plastics and will be made available through the Board's Publications List.

In addition, as required by Health and Safety Code, Section 24384.5, which prohibits the sale of plastic beverage connectors in the state unless the Board classifies them as degradable, the clearinghouse reviews applications for connector products to determine if the applicant's product complies with the law.

One of the most pressing issues facing the Board is the development of markets for recyclable materials. The clearinghouse acknowledges the critical need for markets for recycled plastics and is assisting in this effort in several ways.

The clearinghouse helps institutions with solutions for recycling some of their plastic wastes by offering technical alternatives to the disposal of plastic waste and locating businesses able to accept the material for reprocessing. The clearinghouse also conducted a mail survey of brokers, collectors, processors and manufacturers of recycled plastic products. The purpose of the survey was to collect data on the types of plastics they are accepting and to identify the activities of the participants. Of the 100 questionnaires mailed, more than 50 percent were returned.

A review of the information from the returned surveys revealed that the two plastic items most collected throughout the state are plastic soft drink containers and milk bottles. The surveys also revealed an increase in the number of brokers (intermediate companies that buy postconsumer plastics for recycling) from 14 in 1991 to 30 in 1993. The information on the increase in brokers is confirmed by the 27 companies devoted to baling (compressing the material for shipping). However, the number of reclaiming companies (processing used plastics into granulated flakes or pellets) diminished from 26 in 1991 to 11 in 1993. The information received from the mail survey was used to develop the *1993 California Directory of Plastic Reprocessors and Brokers.*

Accomplishments

- The Board published the *1993 California Directory of Plastic Reprocessors and Brokers*. This directory lists specifications required by buyers and sellers of recycled plastic products to help improve communication between both parties. To obtain a copy of the directory, please see the Publications List, Appendix D, Plastics for further information.

Landfill Capacity Study

[PRC 42540]

The Board realizes the need for long-range planning for diversion of the state's waste stream. One way the Board provides technical and general information to cities and counties is through special studies on issues or problems that affect the ability of local governments, the state, and business and industry to achieve the IWM Act's diversion goals. In 1992, the Board initiated an effort to verify the remaining landfill disposal capacities of jurisdictions and to plan for impending capacity shortages. Toward that end, the Board produced *Reaching the Limit: An Interim Report on Landfill Capacity in California.* This report compiled findings of the mandated Local Task Forces on remaining capacities of landfills under their jurisdiction. The report indicated that one-half of all counties within the state, represent-

ing about 70 percent of the state's population, will be experiencing a shortage of landfill disposal capacity within the 15-year period that began January 1, 1990.

Based upon this and other findings of the interim report, the Board began an effort to gather verified, up-to-date information from each landfill within the state. As part of this effort, the Board directed its contractor to conduct a statewide landfill capacity survey. Each landfill in the state was requested to complete a survey that includes verifying and updating existing data, as well as indicating the methodology employed in determining remaining disposal capacity. The survey will be used as a basis for:

- providing updated accurate information on remaining landfill capacity throughout the state;
- aiding local governments in determining how they will meet the 15-year disposal capacity mandate (PRC 41700-41703);
- providing strategies to overcome critical capacity shortfall; and
- providing landfill operators with standard methodologies to determine remaining disposal capacity.

A final report is expected to be completed and ready for public distribution in the spring of 1994.

Regionalization Study

Regionalization is an IWM option that many jurisdictions are considering in order to achieve the IWM Act's diversion goals. Regionalization results in two or more jurisdictions within a specific region sharing facilities, equipment, labor, transportation, and/or management. There are many combinations of shared waste management systems that would constitute a regional structure. For example, several cities may build a material recovery facility (MRF) together and contract with a distant landfill to accept the unrecyclable municipal solid waste. These cities may cooperate to market recyclables and share the transportation costs to market. Rural counties may share the construction and management costs of a landfill that would service several entire counties or parts of counties. Currently, to minimize costs, Yuba and Sutter counties are sharing a MRF, a landfill, and a household hazardous waste facility.

To fully evaluate the potential for regionalization and to support local governments in their efforts to implement regional programs, the Board contracted for a major study in 1992. With completion expected in the spring of 1994, the study will identify for local governments the advantages and barriers to regionalizing their waste management operations. A discussion of the economies of scale needed to create a successful regional system will be included.

The study will complete the following tasks:

- a literature review of existing regional efforts nationwide, including California;
- identification of the alternatives for regional cooperation;
- a summary review and evaluation of costs and benefits of IWM programs to identify the barriers and advantages of regional systems;
- development of a model and workbook that may be used by jurisdictions throughout the state to evaluate regionalization alternatives using their own cost figures;
- selection and analysis of a California region for a case study; and
- preparation of a feasibility study for regional cooperation in the case study area.

Accomplishments

- The first four tasks of the contracted Regionalization Study were completed. The last two tasks will be accomplished in conjunction with the contractor, local officials, and Board consultants. The workbook and feasibility study will be disseminated to local jurisdictions as part of the Board's "Rural Cookbook." Please refer to Chapter III, Waste Stream Diversion, Local Assistance for a discussion of the Rural Cookbook. All other information generated by this contract will be available to local jurisdictions upon request through the Board's Publication List, Appendix D.

Household Hazardous Waste Program

Household hazardous waste (HHW) is generated by homeowners when they discard products containing hazardous substances. The State Department of Toxic Substances Control (DTSC) makes the determination on what is a hazardous waste; in consultation with DTSC, the Board

implements a HHW program to provide uniform and consistent information on the proper disposal of hazardous substances found in and around homes.

While the federal government has excluded HHW from regulation, California does require specific procedures for its collection, storage, treatment, and disposal. The Board promotes state/local cooperation and addresses this issue by providing grant funds and a broad range of technical assistance to cities and counties to eliminate HHW from the waste stream. For a discussion on HHW education, please refer to Chapter IV, Public Perceptions and Practices, Household Hazardous Waste Education. HHW grants are discussed in Funding Assistance for Local Programs later in this chapter.

During 1993, technical assistance was expanded to rural counties that have not established HHW collection programs by providing information pertinent to their locales. The HHW Technical Assistance program helps local governments in decreasing the amount of HHW going into landfills through targeted support as well as information development.

The Board has collected data on HHW programs for several years through its grant program and surveys. The information collected provides jurisdictions with useful information for initiating and continuing programs, and provides dates of collection events for the Board's Recycling Hotline.

The Board continues to support such efforts as the HHW Information Exchange, where local and state government representatives gather to share information regarding HHW programs. Agencies share information on recurring circumstances in their programs and resolution of these issues. This effort has been ongoing since 1988.

To encourage the paint industry to provide recycling opportunities for unused paint, the Board chairs and participates in the Paint Task Force with DTSC, cities, counties, and the paint industry. Also, with Board funding and staff assistance, the Cal Poly San Luis Obispo Recycled Latex Paint Study is in its second year of a three-year study. This three-year study will: determine whether paint collected at HHW collection programs contains hazardous waste; test the quality of recycled paint; and develop a color-sorting protocol for local governments to increase the marketability of the recycled paint.

Accomplishments

- The Recycled Latex Paint Study's first and second quarter reports provided laboratory results from those quarters' paint sampling collections. Hazardous constituents found were very low.
- The Board completed a 15-minute video on recycled latex paint, directed toward procurement officers, designed to increase marketability of this paint by dispelling myths about it. To obtain a copy of the video, please see the Publications List, Appendix D, Household Hazardous Waste for further information.
- Board staff produced a video of a paint teleconference in another effort to interest procurement officers in the use of recycled latex paint. Panel discussions focused on recycled latex paint quality, availability, variety of colors, costs, application, and safety. To obtain a copy of the video, please see the Publications List, Appendix D, Household Hazardous Waste for further information.

Model Recycling Space Allocation Ordinance [PRC 42900-42911]

A major impediment to diverting solid waste is the lack of adequate areas for collecting and loading recyclable materials in development projects. To address this problem, the Board was required to adopt a model ordinance for use by any local agency. The ordinance applies to development projects that require a building permit (specifically commercial, industrial, or institutional buildings; marinas; residential buildings having five or more living units; or public buildings).

By law, each local agency must adopt an ordinance relating to adequate areas for collecting and loading recyclable materials by September 1, 1994. If any agency fails to adopt an ordinance, the Board's model ordinance will take effect on that date and be enforced by the local agency and have the same force and effect as if adopted by the local agency.

Accomplishments

- The Board developed and adopted a model recycling space allocation ordinance for use by any local agency in March 1993.
- The Board assisted local agencies in preparing their ordinances by:
  - developing a guide summarizing existing ordinances; and
  - collecting articles and reference materials relating to recycling space allocation and making copies of them available to local agencies.

Information Exchange

The Board is establishing a Waste Prevention Clearinghouse to provide for an information exchange among state and local governments, businesses, non-profits, and other interested parties. The clearinghouse will facilitate the exchange of case studies, reports, videos, and other information. Program coordinators will learn about sound waste prevention practices and be able to build off the experience of others. Currently, the clearinghouse includes the following topic areas: waste prevention programs in businesses and institutions, product alternatives, economic incentives, legislative approaches, sample outreach materials, and more. Please see Chapter I, Waste Prevention (Source Reduction), Waste Prevention Clearinghouse for a detailed discussion regarding this program and its accomplishments.

Waste Reduction Awards Program
[PRC 42910]

The Board's Waste Reduction Awards Program (WRAP) offers California businesses an opportunity for recognition of outstanding achievement in commercial IWM. Through promotion of WRAP, the Board is able to identify innovative approaches and increase corporate awareness and interest in IWM methods. Please see Chapter I, Waste Prevention (Source Reduction) for a detailed discussion regarding this program and its accomplishments.

Infocycling

To facilitate provision of information to city and county employees responsible for planning, funding, implementing, monitoring, and evaluating AB 939 programs, the Board developed *Infocycling,* a quarterly information-sharing memo for local government. This represents an effort by the Board to share information believed significant to the development and implementation of local government programs, and to assist these entities in networking with one another. *Infocycling* contains routine information on various Board programs, goals, and actions, as well as other information of interest to the targeted audience, such as: a progress update in meeting the diversion goals of the IWM Act, feature articles on Board programs and activities, and information on solid waste legislation and regulations. To obtain a copy, please see the Publication List, Appendix D, News for futher information.

FUNDING ASSISTANCE FOR LOCAL PROGRAMS

The Board is authorized by law to provide funding assistance in the form of grants and loans for local programs to ensure that HHW is not improperly disposed of in solid waste landfills; to promote and develop alternatives to the landfill disposal of used whole tires; and to eliminate illegal disposal of used oil and reduce landfill disposal through recycling. A Grants Hotline was established to provide individuals and organizations with current grant information: **(916) 255-2577.**

Household Hazardous Waste Grants
[PRC 47200-47202]

The most successful program in encouraging the establishment or expansion of HHW efforts is the grants program. AB 2448 by Assemblymember Eastin (Chapter 1319, Stats. 1987), established the HHW grants program and authorizes the Board to award grants to cities, counties, and local agencies for programs that help prevent the disposal of hazardous waste at solid waste landfills, including HHW. The grant program was amended by AB 3348 by Assemblymember Eastin (Chapter 1218, Stats. 1992) when program funding priorities were directed toward:

- new programs for rural areas, underserved areas, and small cities;

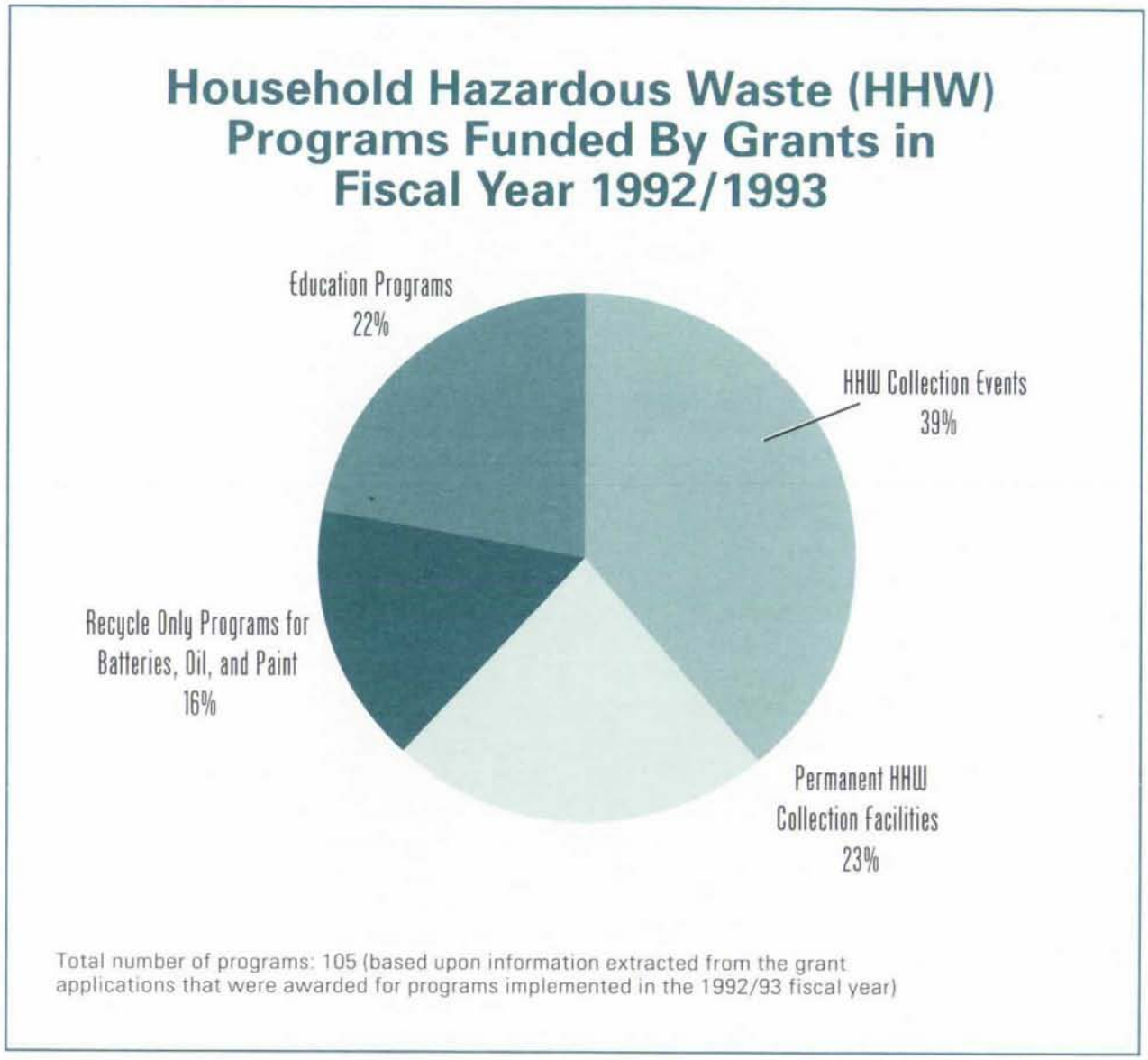


Figure V-1

- expansion of existing programs to provide for the collection of additional waste types, innovative or more cost-effective collection methods, or expanded public education services; and
- regional HHW programs.

This legislation also increased the funding available for the grant program from $4 million to $7 million. Grants are used to reimburse existing HHW program costs ($4 million) and to support new and expanded programs ($3 million). Grants are awarded for a variety of activities, including: funding for HHW public education and outreach programs; construction of permanent HHW collection facilities; collection programs including periodic, mobile, and residential pickup services; recycle-only programs for automotive batteries, latex paint, and used motor oil; load checking programs; and programs that emphasize reducing, reusing, or recycling of HHW. (See Figure V-1 for HHW program types that were funded by HHW grants in the 1992/1993 fiscal year.)

Effective October 1, 1993, AB 1220 by Assemblymember Eastin (Chapter 656) mandates that up to $4 million in grants be awarded in the 1993-94 fiscal year (FY). Beginning in FY 1994-95, $3 million in grants will be given to local agencies annually for programs that expand or initially

implement HHW programs. Also under this new legislation, grants will continue to be awarded under the same funding priorities set forth in AB 3348.

Accomplishments

- The Board awarded 60 grants totaling $4 million to local governments for programs implemented in the previous year that help prevent the disposal of HHW at solid waste landfills.
- Board staff began implementation of the HHW grant program for FY 1993-94 as mandated by AB 1220. Information and application instructions were made available to local government representatives and other interested parties in October 1993. Sixty-seven grant applications were received from local governments by the December 1993, deadline. HHW grant awards are planned to be considered by the Board for adoption in the spring of 1994.

Tire Recycling Program [PRC 42800-42895]

California is faced with the challenge of responsibly managing more than 28 million used tires entering the waste stream annually, amounting to nearly one tire for every person in the state. Tires present an unusually challenging disposal problem because of their physical and chemical properties. The storage, recycling, and disposal of used tires require a comprehensive, statewide response, including:

- reducing landfill disposal of used whole tires;
- recycling of used tires into secondary uses;
- source material development and promotion of secondary markets for used tire by-products;
- used tire shredding; and
- energy recovery.

Based on current survey information, more than 13 million tires are diverted annually for various alternative uses, including reuse, recycling, retreading, and combustion. The remaining 15 million tires are either disposed of in California's solid waste landfills, stored indefinitely in tire piles, or otherwise illegally disposed of around the state. (See Figure V-2, Page 66, for estimated used tire recycling and disposal in 1993; and Appendix E, Tire Recycling Program Annual Report, for a full explanation of used tire recycling and disposal rates for 1993.) The Tire Recycling Program Annual Report is prepared to provide the Legislature with data on the number of tires recycled or otherwise diverted from disposal in landfills or stockpiles. Additionally, the report provides the Legislature with information on comparative costs and benefits of the recycling or conversion processes funded from the California Tire Recycling Management Fund.

The California Tire Recycling Management Fund was created under the California Tire Recycling (TR) Act of 1989. Since July 1990, a 25-cent fee per tire paid by consumers who leave used tires with a dealer goes into this fund. The TR Act requires the Board to initiate a tire recycling program with monies from this fund. The primary objectives of the program are to reduce the disposal and stockpiling of used tires by 25-percent within four years of full program implementation, and to promote the reuse and recycling of tires to the greatest extent possible. Program funds may be used to provide grants, loans, and contracts to both public and private entities. Funds can also be used by the Board for research, public information activities, and to clean up tire stockpiles.

The grants component of the tire recycling program was successfully administered through existing legislation during FY 1992-93. Based on the specificity of the governing code, the need for regulations was reevaluated and regulations development was not pursued.

Specific information on annual appropriations for the tire program is contained in the *Notice of Funds Available* (NOFA) distributed by the Board each fall to all parties on the Board's mailing list. The NOFA identifies categories and types of projects considered for funding during the grant cycle, eligible applicants, and other essential information for potential applicants.

Accomplishments

- The "Waste Tire Market Development and Recycling Conference" was sponsored by the Board in April 1993. The conference provided a forum for the exchange of information and ideas among representatives of private industry, the public, and local and state government to promote alternatives to landfill disposal of used whole tires.

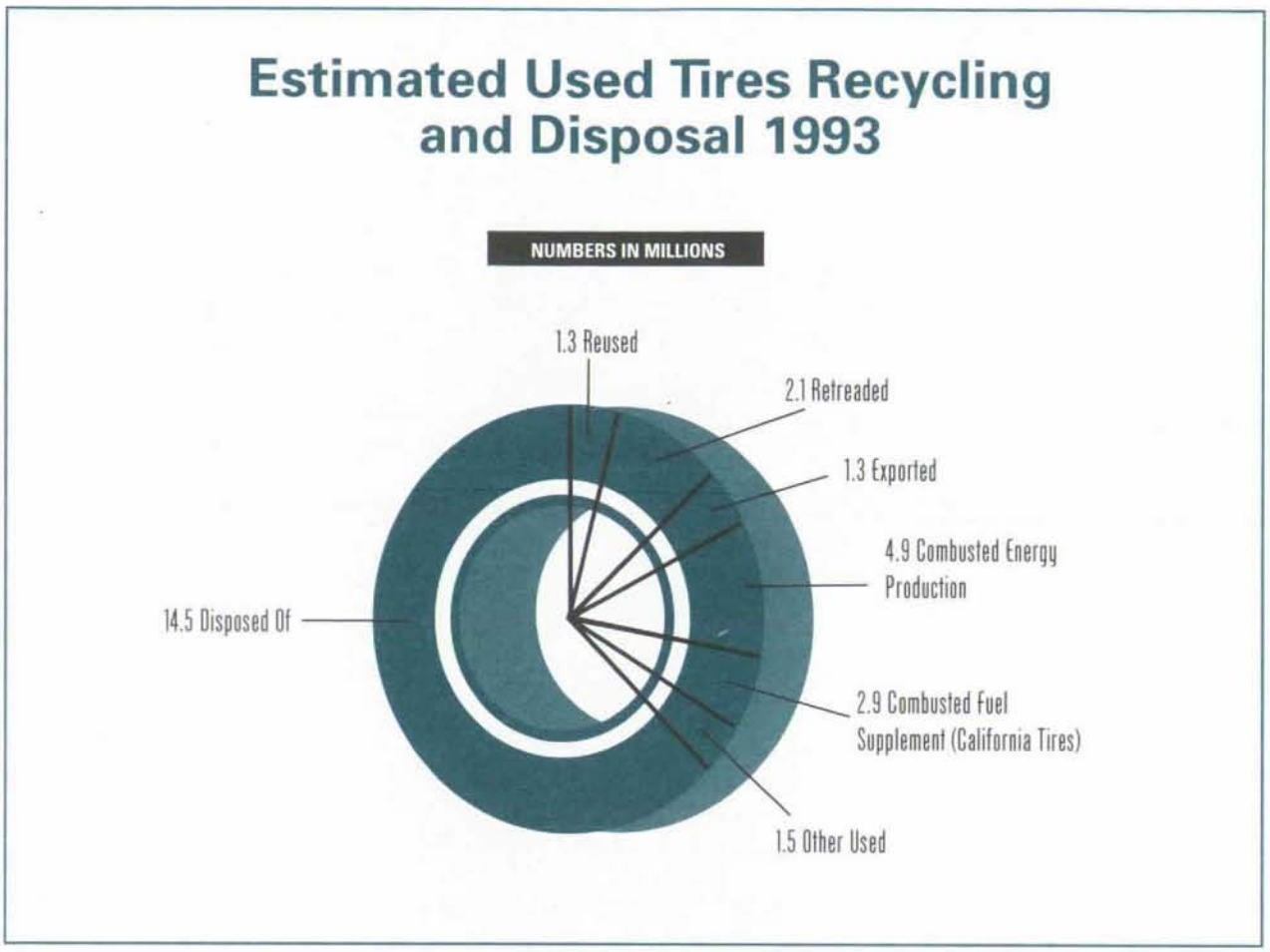


Figure V-2

- The Board awarded grants totaling $1.5 million to business enterprises and public entities involved in tire recycling activities (up to $50,000 for individual tire-related business development projects and up to $100,000 for individual innovative research projects). Some examples of grant projects approved during the FY 1992-93 funding cycle include:
  - development of railroad ties made from tire rubber and concrete;
  - research of the use of an ozone treatment to disintegrate tires and separate rubber from steel;
  - design and testing of a sound-absorbing noise barrier that meets the California Department of Transportation's requirements;
  - research and testing of traffic posts and cones made from waste tires; and
  - testing of the feasibility of using ultrahigh pressure water jets to separate waste tire rubber from steel belts.
- The Board awarded $447,000 in contracts to local governments for innovative waste tire management projects (up to $40,000 for market development projects, up to $30,000 for collection and processing demonstration projects, and up to $30,000 for illegal disposal cleanup and public education projects). With $440,187 being contributed by local jurisdictions in the form of required matching dollars or in-kind services, the total value of the program approaches $1 million. Some examples of used tire projects approved for funding include:
  - a study of the potential for shredding tires and using them as landfill daily cover and protective cover;
  - rubber asphalt pavement projects;

- construction of a youth activity center with waste tires and recycled building materials;
- demonstration of the potential for solving the oversized waste tire problem by using a special machine to cut the material for other uses;
- aggressive tire pile cleanups in concert with related public education programs, e.g., a "waste tire amnesty day" in rural areas to encourage the public to return their used tires; and
- development of an informational video on the hazards of waste tires to elevate public awareness of the illegal tire disposal problem.

- The Board announced the availability of $1 million in grant funds for FY 1993-94 to divert used tires from California's landfills. Funds are intended to promote business development and for innovative research, as well as to encourage innovative programs at the local level. The deadline for submitting completed applications to the Board is February 25, 1994. Information on the availability of the tire grant funds was provided to those on the Board's general mailing list, as well as to interested parties on the tire recycling program's mailing list.
- The 1993 Tire Recycling Program Annual Report is completed and included as Appendix E of this report.

Used Oil Funding Assistance

[PRC 3470-94, 48600-48691]

To encourage the collection, reuse, recycling, and proper disposal of used oil, the Board adopted both short- and long-term funding strategies for local government. The Board promoted public used oil curbside collection through a one-year program by funding and monitoring used oil collection demonstration grant projects. Through its Used Oil Recycling Program, the Board is authorized to issue grants and loans on a continuing basis to discourage illegal disposal of used oil through recycling.

Used Oil Collection Demonstration Grant Program

In 1991, the Board received funding to administer a used oil demonstration grant program designed to encourage the establishment of public used oil curbside collection projects. Local agencies offering households the opportunity to recycle or otherwise appropriately dispose of used oil were eligible to receive a grant. The grant program is funded by fees from the Petroleum Violation Escrow Account. One million dollars was allocated to the Board for the grant program. A grant to any local agency could not exceed $75,000.

In 1992, the Board awarded 19 grants to cities and counties totaling $840,057, a one-year program that reached completion on October 1, 1993.

Accomplishments

- The Board received reports from the Used Oil Collection Demonstration Grant Program recipients in December 1993. Information from these reports, as well as statistics and statewide use recommendations, will be included in a final report. The final report will be submitted to the Legislature upon Board approval and will be made available after publication through the Board's Publications List. Board consideration of adoption of this final report is targeted for early 1994.

Used Oil Recycling Program's Grants and Loans

The California Oil Recycling Enhancement (ORE) Act was passed by the Legislature and became effective January 1, 1992. The primary purpose of this legislation is to discourage the illegal disposal of used oil through recycling. The ORE Act authorized the Board to adopt a Used Oil Recycling Program to promote and develop alternatives to the illegal disposal of used oil.

Beginning October 1, 1992, the ORE Act required oil manufacturers to pay the Board a four-cent fee for every quart of lubricating oil sold, transferred, or imported into the state. Fees collected from the amounts paid were deposited into the California Used Oil Recycling Fund. Moneys in the fund are used by the Board as follows: to pay recycling incentives; to pay administrative costs; to provide a reserve for contingencies; and to make block grants, other grants, and loans. Please see Chapter

III, Waste Stream Diversion, Used Oil for a complete discussion of the Board's Used Oil Recycling Program and its accomplishments, and see Chapter IV, Public Perceptions and Practices, Used Oil Public Education Campaign for discussion related to used oil public education.

The ORE Act also authorizes the Board to allocate a minimum of $10 million annually to reimburse cities and counties in the form of block grants for the implementation and operation of used oil collection programs. Block grants are awarded noncompetitively on a per capita basis using the State Department of Finance's population statistics.

In addition to block grants for local government, the Board is also authorized to award grants and loans to:

- local governments to provide opportunities for used oil collection in addition to those included in the local used oil block grant program;
- nonprofit entities to establish used oil collection centers, provide containers to the public for used oil collection, and provide assistance to meet regulatory requirements; and
- any qualified applicant for research, testing, and demonstration projects to develop uses for used or recycled oil.

Board staff have begun preliminary work on developing other used oil grants and loans. Appropriations for the grants and loans will be based on the amount of money available after payment of used oil incentive claims, administrative costs, and block grants.

Accomplishments

- Used oil recycling workshops were conducted by Board staff at nine locations throughout the state for several hundred representatives from the oil industry and local government agencies. These workshops provided an overview of the incentive, certification, and grant features of the Used Oil Recycling Program.
- Block grant application packages were mailed to 527 local government officials and other interested parties who requested an application. Representatives from more than 200 jurisdictions were contacted to clarify their understanding of the program and to encourage their participation. Local governments were encouraged to consider programs that include partnerships with private, nonprofit, or other governmental organizations.
- The Board awarded 98 block grants totaling more than $6.2 million to local governments for the implementation of local used oil collection programs. Typical programs funded by the block grants included:
  - establishment of publicly operated used oil collection centers;
  - continuation and/or expansion of curbside used oil collection programs;
  - development and distribution of used oil public education materials on proper disposal; and
  - assistance to private and nonprofit entities collecting used oil from the public at no charge.

REGULATIONS [PRC 40502]

The Legislature enacts statutes mandating solid waste management. The Board, in a cooperative effort with local governments and industry, jointly develops regulations through a continuous dialogue with the regulated community to implement those statutory mandates. The participation of local government and industry is essential for the development of reasonable and enforceable regulations. The ongoing link established with these entities provides the feedback necessary to develop new regulations and revise existing regulations and to facilitate cost-effective implementation of state policy. To further implementation, the Board disseminates regulatory information to the regulated community and provides education in the form of technical assistance, training, and workshops. Where revision of regulations alone is inadequate, the Board, with community input, may advocate changes to state law.

The Board, working with the State Water Resources Control Board (SWRCB), developed a joint report to eliminate overlapping responsibilities between state and local agencies in the regulation of solid waste disposal. The report led to the enactment of AB 1220, the Solid Waste Disposal

Regulatory Reform Act. The Board's contribution to this Act is a significant step forward in changing the regulatory practices of the Board and the SWRCB relating to solid waste disposal.

The following is a description of the Board's major rulemaking activities.

Resource Conservation and Recovery Act [PRC 40508]

The federal Resource Conservation and Recovery Act (RCRA) governs the manner in which both solid and hazardous wastes are managed. Minimum federal standards for municipal solid waste management are established by Subtitle D of RCRA. RCRA requires each state to adopt regulations that meet the minimum federal standards. The management of hazardous waste is administered by DTSC; nonhazardous solid waste is under the jurisdiction of the Board.

RCRA was amended in 1984, and as a result of ensuing court action, the United States Environmental Protection Agency (US EPA) was required to revise the criteria for solid waste landfills. In response to the court action, US EPA adopted self-implementing regulations in 1991, that specify criteria for location, design, operation, and closure of municipal solid waste landfills. On October 9, 1993, owners and operators of most landfills were required to comply with these federal requirements or face citizen lawsuits in federal court.

The Board, working as the lead agency for California, coordinated activities with other state agencies, including the SWRCB, to receive full approved state status. In a US EPA approved state, owners and operators may use 21 alternative means to comply with the federal criteria that are not available in unapproved states. The principal factor driving the Board's pursuit of full approved state status is the ability to grant flexibility in meeting strict federal standards where California's diverse climatic and geologic features warrant it. This flexibility is essential in working with the state's public and private operators to ensure long-term landfill capacity and to maximize diversion. On October 7, 1993, the US EPA published in the Federal Register a determination that California was a fully-approved state.

As part of the process to receive full approval for Subtitle D implementation, the Board has provided frequent communication to local government and industry as described below.

Accomplishments

- The Board sponsored AB 1827 by Assemblymember Sher (Chapter 289, Stats. 1993) and adopted emergency regulations to bring the state's landfill management program into compliance with federal criteria under Subtitle D. The SWRCB adopted "A Policy for Regulation of Discharges of Municipal Solid Waste" (Resolution No. 93-62) to direct State Regional Water Quality Control Boards (RWQCB) in implementing the federal rules.
- A newsletter entitled *Subtitle D Update* was distributed to more than 1,000 interested parties. This newsletter provided landfill owners and operators timely updates on the US EPA's review of the state's application for program approval.
- The Board conducted public workshops throughout the state to provide information on the technical requirements of the federal Subtitle D criteria, the status of the state's request for an "approved state" determination from US EPA, and the state's protocol for granting requests for flexibility. More than 4,000 notices on the workshops were mailed to municipal solid waste landfill owners and operators, consultants, local enforcement agencies, public works directors, city council members, county supervisors, city/county attorneys, mayors, elected officials, and other interested parties.
- The Board initiated formal revisions to the existing municipal solid waste landfill regulations to conform with recent changes to federal Subtitle D regulations. The changes include an extension to the October 9, 1993 effective date of the federal rule for small and very small landfills, as defined under Subtitle D. Board staff anticipate approval from the State Office of Administrative Law by early spring of 1994.

Solid Waste Disposal Regulatory Reform Act

A great achievement of the Board in 1993, was the development of a joint report with the SWRCB that identifies overlapping responsibilities between state and local agencies in the regulation of solid waste disposal in the state. The *Joint Report: Reforming the California Solid Waste Disposal Regulatory Process, April 1993* was prepared to fulfill the reporting requirements of AB 3348 by Assemblymember Eastin (Chapter 1218, Stats. 1992).

The report found that duplication and conflict exist between state and local agencies responsible for regulating solid waste facilities. Also, statutory and regulatory changes are needed to remove areas of duplication, overlap, and conflict between the Board and SWRCB, and between the Board and the LEAs. A recommendation was made to consolidate three regulatory fees into one combined fee, resulting in a cost savings to solid waste facility operators and individual ratepayers.

The joint report was used as a blueprint for developing AB 1220, by Assemblymember Eastin (Chapter 656, Stats. 1993). AB 1220 became effective on October 1, 1993, and enacts the Solid Waste Disposal Regulatory Reform (SWDRR) Act. This legislation implements the recommendations embodied in the joint report by making important streamlining reforms in the landfill permitting requirements and eliminating areas of duplication and conflict between the Board and SWRCB and between the Board and LEAs.

The Board and the SWRCB are committed to ensuring the SWDRR Act is implemented in an effective and efficient manner. To demonstrate their commitment to carrying out the spirit of reform embodied in the legislation, both Boards have designated staff to work on an implementation team. The Board established a Permit and Regulatory Reform Team (PARRT) whose sole responsibility is to work with SWRCB and other agencies. PARRT will facilitate implementation of aspects of the SWDRR Act related to solid waste disposal facilities, including permit streamlining and consolidation of requirements.

Accomplishments

- The Board initiated development of a conceptual draft implementation work plan for the requirements of AB 1220, including regulation revision, permit streamlining, and administrative changes. A discussion draft document will be used as the basis for several workshops planned throughout the state to receive comments from affected state agencies, LEAs, industry, and any other interested parties. A more comprehensive draft document is expected to be completed in early spring of 1994.
- The Board developed a plan for researching the possibility of consolidating financial assurances for operating liability and corrective actions into one mechanism. This plan is part of the implementation work plan for the AB 1220 requirements.
- The *Solid Waste Management Permit and Regulatory Reform* was initiated by the Permit and Regulatory Reform Team. This monthly update provides current information to interested and affected parties on the Board's progress in implementing requirements of AB 1220. To obtain a copy of the updates, please see the Publications List, Appendix D, Solid Waste Facilities for more information.
- The Board analyzed regulations and procedures designed to accomplish AB 1220's intent on an interim basis. The revision of regulations will take many months and will not begin until a work plan is developed. Interim measures will be communicated to LEAs and RWQCBs, to ensure these agencies have clear direction on removing overlap, duplication, and conflict.
- The Board established a work group of representatives from affected state agencies, local agencies, industry, and environmental groups to assist the Permit and Regulatory Reform Team. The group will provide input on interim procedures as well as a proposed plan for implementation of AB 1220. Since the SWDRR Act became effective on October 1, 1993, requiring changes to regulations, interim determinations are required until regulations are adopted. In addition to

assisting in the development of interim measures, the information shared by group members will provide a valuable foundation for the development of regulations.

Composting Regulations

The Board chose development of composting regulations as a high impact project for priority development in 1993. The new composting regulations will establish minimum standards for facility permitting, design and operation, and reporting requirements. Existing law requires composting facilities to obtain a Solid Waste Facilities Permit in order to operate. In the past, composting facilities have been permitted under transfer station regulations.

Composting regulations are being developed in two phases. The first phase is the development of green material composting regulations, e.g., for yard waste. The second phase is the development of regulations for the composting of food material, sewage sludge, and mixed solid waste.

Accomplishments

- The Board adopted green material composting regulations and received approval from the State Office of Administrative Law (OAL) in mid-1993. Public workshops, meetings, and hearings were held to gather essential public comment for the development of these regulations.
- Board staff initiated an informal rulemaking process for the development of regulations for the composting of food material, sewage sludge, and mixed solid waste. A draft set of the proposed regulations was distributed for discussion at the first public workshop held in late 1993. In attendance were local government representatives, composters, and other interested parties. Additional workshops will be held throughout the state. The formal regulatory development process will be initiated by noticing the proposed regulations with OAL. Board staff expect to complete this phase with approval by OAL of the final regulations slated for late 1994.

IWM Planning [PRC 40502, 42540]

In its oversight of local government IWM planning, the Board has developed regulations necessary to carry out the IWM Act's mandates for jurisdiction development and implementation of Countywide Integrated Waste Management Plans (CIWMP) and elements. CIWMP regulation development by the Board includes an extensive public review process with direct involvement by local government.

The Board initiated legislation in response to local government concerns about implementation of the IWM Act. This legislation, AB 2494 by Assemblymember Sher (Chapter 1292, Stats. 1992) and AB 3001 by Assemblymember Cortese (Chapter 1291, Stats. 1992), was an achievement of the Board in 1992. The IWM Act was substantially modified by restructuring and simplifying the planning and diversion requirements for local governments. Major relief was accomplished by reducing costs for cities and counties in preparing their mandated CIWMPs.

Features of AB 2494 include:

- the use of a "disposal-based" method to determine compliance and allowing regional implementation of the planning mandates;
- providing local governments with increased assistance in the areas of source reduction, market development, and public education; and
- providing local governments with model programs and materials for rural jurisdictions and model planning documents for all jurisdictions (i.e., CIWMPs, Nondisposal Facility Elements (NDFE), and annual reports).

AB 3001 requires cities and counties to prepare NDFEs for facilities used for other than land disposal or transformation. The NDFE requires all jurisdictions to identify and describe all diversion facilities that recover for reuse or recycling at least five percent of the total volume of material received by the facility. Facilities that recover less than five percent may also be described in the NDFE but will not be subject to Board approval in the CIWMP. While the other elements of the CIWMP require approval at the local level, the NDFE is neither subject to county approval nor is it subject to the California Environment Quality Act requirements. The adopted NDFE must be submitted to the Board with the Source Reduction

and Recycling Element (SRRE) on a specified schedule described in AB 440 by Assemblymember Sher (Chapter 1169, Stats. 1993). Effective October 11, 1993, AB 440 makes significant changes in the submittal due dates for the final SRREs, requiring submittal of the first wave of SRREs in April 1994, for Board approval. A jurisdiction will not need to revise existing SRREs to include nondisposal facilities; however, at the first revision of the SRRE, the NDFE will be incorporated into the SRRE. Please see Chapter III, Waste Stream Diversion, CIWMP Review for a complete discussion of the legislative changes contained in AB 440.

Implementation of these legislative changes has required the amendment of existing regulations and the development of new regulations. Among the regulations are guidelines for preparing the content and procedures for review and submittal of CIWMPs; guidelines for preparing the content for NDFEs; revisions of the content for SRREs and HHWEs; and procedures for review and submittal of NDFEs, SRREs and HHWEs.

Regulations for the CIWMP Summary and Countywide Siting Element will be permanent after the Board's final adoption and filing with OAL in the spring of 1994.

Accomplishments

- The Board adopted and filed with OAL emergency regulations for preparing the NDFEs (Article 6.4).
- The Board adopted and filed with OAL emergency regulations that revise procedures for preparing the SRREs (Article 6.2) and procedures for approval of SRREs, HHWEs, and NDFEs (Article 7.0).
- The Board held two public workshops on the development of the AB 440-related emergency regulations in November 1993, one in Whittier and one in Sacramento. A focused workshop was also held to discuss proposed revisions to the procedures for requesting diversion credit for sludge.
- The Board prepared and submitted for public review and comment proposed regulations for preparing the Countywide and/or Regional Agency IWM Plans (Article 6.6) and the Countywide and/or Regional Siting Element (Article 6.5). Also submitted were proposed regulations of procedures for preparing and revising Countywide and/or Regional Siting Elements and Countywide and/or Regional IWM Plans (Article 8.0). Board consideration of adoption is targeted for early 1994.

Waste Generation

[PRC 40901, 41780.1(c), 41821.5]

To assist jurisdictions and the Board in determining whether the 25 percent and 50 percent diversion mandates have been achieved, the Board is developing a uniform disposal reporting system, revising the procedures and requirements for preparing solid waste generation studies (SWGS), and developing a uniform system for adjusting the quantities of base-year solid waste generation.

Uniform disposal reporting regulations should provide improved data accuracy on the amounts of solid waste being disposed of by jurisdictions. More accurate data will allow jurisdictions and the Board to measure both jurisdictional and statewide progress in achieving the diversion mandates. These regulations should also provide diversion information for use by the Board, jurisdictions, businesses, and consultants for planning, marketing, and research activities.

Revising the procedures and requirements for preparing SWGSs could result in significant cost savings for jurisdictions, especially those forming regional agencies. The jurisdictions in a regional agency will be able to share the costs of preparing, revising, and implementing a single regional agency SWGS.

Development of a uniform system for adjusting the quantities of base-year solid waste generation will allow jurisdictions to calculate the quantity of solid waste disposal reduction they must realize to achieve the 25 percent and 50 percent waste diversion mandates.

Accomplishments

- The Board initiated the following regulatory efforts:
  - development of proposed uniform disposal reporting regulations that will require periodic surveys by permitted landfill and transformation facility operators. The surveys will quantify, by jurisdiction, the amount of solid waste disposed of during the survey period. The results of the

surveys will be forwarded to the county in which the permitted landfill and transformation facilities are located for further processing. The county will distribute the report to the jurisdictions and the Board. These regulations are expected to be completed by late summer of 1994.

- development of proposed uniform diversion reporting regulations that require the maintenance of records by recycling and composting facility operators on the source of materials processed, by county; records must also quantify the amounts of each material disposed, sold to users (e.g., manufacturers), and transported out of state. Reports will be forwarded to the county in which a recycling and/or composting facility is located. The county will compile the information and prepare reports for distribution to the jurisdictions and the Board. These regulations are expected to be completed in late 1994.

- revisions to regulations on the procedures and requirements to be used by jurisdictions when preparing SWGSs. A jurisdiction preparing a revised SWGS will quantify the amount of solid waste disposed of and the amount diverted through programs it funds and operates. Quantification of private recycling and composting will not be required for inclusion in revised SWGSs. These regulations are scheduled to be finalized by the end of February 1994.

- The Board contracted with the University of California at Los Angeles for a study to develop a uniform waste generation adjustment method. The method will be used to account for changes in solid waste generation caused by changes in population, economics, and other factors. Two working group meetings were conducted. The first meeting focused on a review of literature and on developing criteria for the method. The second meeting focused on the consultant's proposed method and testing criteria for use by jurisdictions. All jurisdictions were surveyed to recommend the adjustment factors to be included. Selected jurisdictions will test the method to determine its accuracy and applicability. A draft version of the Adjustment Method Users Guide will be distributed for review by all jurisdictions in January 1994. The study to develop the method is slated for completion in 1994. Regulations pertaining to the method will be developed once the testing has been completed.

- The Board adopted a weight/volume conversion factor study for in-vehicle and in-landfill waste densities. Over 1,900 interested parties, including jurisdictions and landfill operators, were notified that the study was available. The weight/volume conversion methods can be used by jurisdictions that do not have scales to calculate their disposal tonnage. The methods will be referenced as an optional tool for reporting entities in the uniform disposal regulations that are currently under development. To obtain a copy of the study, please see the Publications List, Appendix D, Local Planning for further information.

LEA CERTIFICATION AND PERFORMANCE EVALUATION

[PRC 43200-43221]

LEAs are empowered by the state to enforce laws and regulations and implement Board policies for the correct operation and closure of California's solid waste facilities. LEAs also enforce local ordinances adopted pursuant to solid waste statutes and regulations.

LEAs are designated by their local governing body. To ensure they are implementing local programs pursuant to statute and regulations for the protection of public health, safety, and the environment, all LEAs must be Board-certified. To date, 53 LEAs have been certified by the Board. In some cases, LEA jurisdictions include multiple counties. More LEAs may be designated if they meet the minimum certification requirements. (See Appendix C for a listing of certified LEAs.) Please see Chapter VI, Regulation and Solid Waste Facilities Management, Enforcement Agencies for a complete discussion of when the Board serves as the enforcement agency.

To ensure that LEAs are kept abreast of current statutes, regulations, Board policies, and technologies, the Board provides ongoing training, technical

assistance, and guidance (PRC 42500-42501, 43217). The Board also provides grants to LEAs to help in the cost of landfill permitting and inspection (PRC 46400-46402, 46504).

The Board evaluates LEA performance in the enforcement of solid waste collection, handling, and disposal statutes and regulations (PRC 43214). Effective October 1, 1993, AB 1220 by Assemblymember Eastin (Chapter 656, Stats. 1993) strengthens the Board's program for evaluating LEAs and requires an evaluation of LEA performance every 18 months. The purpose of the evaluation is to ascertain that the LEA:

- continues compliance with its certification requirements;
- provides consistent enforcement of statute and regulations pertaining to the handling and disposal of solid waste; and
- implements its Board-approved Enforcement Program Plan (EPP), an administrative enforcement plan to implement duties and responsibilities in the jurisdiction.

All LEA performance will now be assessed beginning with the LEA's certification (AB 1220). Please refer to the Solid Waste Disposal Regulatory Reform Act discussed earlier in this chapter under Regulations for additional discussion of AB 1220.

LEAs are expanding and enhancing their initial EPPs to provide for ongoing implementation of their local enforcement program.

Accomplishments

- LEA evaluation procedures were developed to assess LEA performance, identify LEA program implementation issues, and provide guidance in resolution of these issues. The first LEA evaluation will take place in early 1994. The principal elements are:
  - identify the LEA for evaluation;
  - notify the LEA of the upcoming evaluation;
  - assess the LEA's designation, certification maintenance, and document findings for the LEA's abilities in permitting, inspection, and enforcement;
  - summarize findings, prepare draft report, and conduct an exit conference with the LEA;
  - modify the draft report to include relevant LEA comments and follow-up information; and
  - produce and forward a final evaluation report to the LEA.
- LEA/Board training workshops were held at several locations in the state on the following topics: inspection and enforcement procedures, closure/postclosure and financial assurance procedures, and compliance with federal Subtitle D regulations. Additionally, the Board and LEAs agreed that where clarification on policies or procedures is needed, the clarification will be prepared as a *Policy Memo* or an *LEA Advisory* for both Board staff and the LEAs. Policy memos are designed to provide interpretation of statutes, regulations, and procedures. To date, the LEA advisories have provided information on several subjects, such as: asbestos-containing waste disposal; legislation impacting existing programs; the site investigation process for closed, illegal, and abandoned disposal sites; and the use of contaminated soil as daily cover. The Board also provided a technical bulletin that accompanied an advisory on fungal spores. The bulletin is entitled, "Aspergillus, Aspergillosis, and Composting Operations in California." The bulletin was prepared in response to potential adverse health effects associated with airborne fungal spores raised as issues by some Californians during the siting or operation of composting facilities.
- Quarterly "Roundtable" meetings were held between Board and LEA staff. These meetings provided a forum intended to address LEA program implementation issues and concerns, and to relay LEA feedback to various Board divisions.
- Board staff presented the California Council Directors of Environmental Health with upcoming Board regulations, policies, and procedures for solid waste issues. Most LEAs and their directors are public and/or environmental health agencies.
- The Board awarded $1.5 million as enforcement assistance grants to all qualifying LEA jurisdictions to enhance their landfill permitting and inspection programs.

- The Board initiated a formal regulatory process to revise the LEA certification regulations. The proposed revisions address some Board and LEA needs, and implement new legislation (AB 457 by Assemblymember Areias, Chapter 665, Stats. 1993). Prior to beginning the formal process, the proposed revisions were informally presented for review and comment to the Enforcement Advisory Council (EAC), LEAs, landfill operators, and other interested parties. The information provided by these concerned parties was used to strengthen the proposed revisions before beginning the formal process.

Enforcement Advisory Council

The Board created the Enforcement Advisory Council (EAC) in 1983, to advise the Board and its staff on all issues pertaining to the duties of LEAs. The EAC consists of nine members representing the various regions of the state and the disciplines engaged in solid waste enforcement. Members of the EAC work to achieve a coordinated, consistent statewide enforcement program by providing ongoing communication among all LEAs and the Board. Because its membership consists of those directly responsible for LEA programs, the council has evolved into a partnership between the LEAs and the Board. This association allows local enforcement officials the opportunity to develop a more complete understanding of emerging issues and policies at the Board, and strengthens the Board's relationship with the local enforcement community.

The EAC held several quarterly meetings in 1993. Many new or revised Board regulations and policies were discussed and commented upon (e.g., tire, composting, and permitting regulations; pending legislation; and LEA evaluation procedures).

VI. Regulation and Solid Waste Facilities Management

As California's lead agency for solid waste management, the Board is responsible for ensuring the local enforcement of state solid waste standards for the protection of public health, safety, and the environment. California is facing several significant challenges in managing solid waste, including: diminishing landfill capacity; the need to evaluate viable alternatives for solid waste facilities to meet environmental standards; the permitting of new types of solid waste facilities; and the review of proposed development projects on closed landfill sites.

The Board's broad range of responsibilities include regulation of solid waste facilities. In 1993, the Board initiated improvements to streamline the existing regulatory process and provide solid waste facility operators with a predictable, efficient, and reliable regulatory structure.

The Board's responsibilities span the complete lifecycle of a solid waste facility—from inception (permitting) through operation (inspection), to closure and postclosure responsibilities. The Board's responsibilities have been expanded to include orphaned, abandoned and illegal waste disposal sites. Regulation is administered through the programs listed below.

ENFORCEMENT AGENCIES

[PRC 43200-43221]

Local governing bodies are authorized by the Public Resources Code to designate a local agency to carry out solid waste permitting, inspection, and enforcement duties in their jurisdictions. To have enforcement authority, the designated local agency must be certified by the Board as the local enforcement agency (LEA). Once empowered by the state, an LEA enforces state laws and regulations and implements Board policies. LEAs must also enforce local ordinances adopted pursuant to statutes and regulations pertaining to solid waste.

Please see Chapter V, Partnerships with Local Governments and Industry, LEA Certification and Performance Evaluation for a complete discussion of LEA certification and performance evaluation.

Some jurisdictions will either not seek certification or will be unable to meet the certification requirements. In those cases, the Board is required to become the enforcement agency (EA). The Board served as the EA in four jurisdictions in 1993 (City of Berkeley, City of Pittsburg, County of Santa Cruz, and County of Stanislaus). (See Figure VI-1, Page 78, for a comparison of Board and LEA responsibilities.)

A new section was established within the Board's organization that allows the Board to operate more effectively as an EA. Owners/operators of solid waste facilities are afforded a single section of the Board to conduct all permitting, inspection, enforcement, and closure requirements. As an EA, Board staff is responsible for, but are not limited to, performing monthly inspections of active solid waste facilities and illegal sites; preparing and presenting solid waste facilities permits to the Board for issuance; and reviewing Closure and Postclosure Maintenance Plans and remediation plans.

PERMITTING SOLID WASTE FACILITIES

[PRC 44002, 44009, 44201 et seq.]

Every operating solid waste facility is required to have a Solid Waste Facilities Permit (SWFP). The SWFP serves as the basis for site monitoring and evaluation. (See Figure VI-2 for the number of different types of solid waste facilities.)

The permit is initiated at the local level, with submittal of an application for a new, revised, or modified SWFP to the LEA. The application may consist of: an application form; a Report of Facility Information; conditional use permits; a certified environmental document; permits required by other agencies; and, for landfills, a Closure and Postclosure Maintenance Plan.

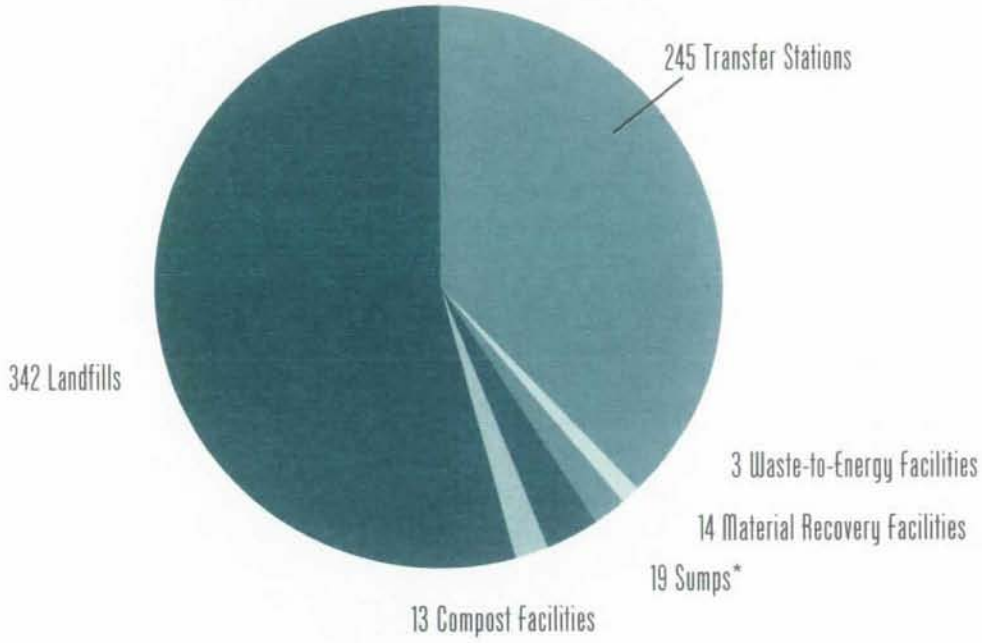
Board and Local Enforcement Agency Responsibilities

Responsibility	The Board	Local Enforcement Agency
Conduct inspections of active permitted facilities	Landfills and transformation facilities—18 months; other facilities—as needed or appropriate; and when pre-permit inspections are needed	Monthly
Conduct inspections of closed, exempted, and abandoned facilities	As needed	Quarterly
Conduct inspections of illegal facilities	As needed	Monthly
Conduct inspections of waste tire facilities	Pre-permit	Major facility-Annually Minor facility-30 months
Conduct inspections of solid waste handling collection equipment	As needed when serving as Enforcement Agency	Schedule determined by LEA
Maintain an Inventory of Solid Waste Facilities Violating State Minimum Standards	On going	May make recommendations
Coordinate multi-media inspections	As needed	Participate in
Take appropriate enforcement action	When serving as Enforcement Agency or under extenuating circumstances	As needed
Provide training, technical assistance, and guidance	To LEAs ongoing	To operators as needed

Figure VI-1

Number of Different Types of Solid Waste Facilities Currently Operating

As of December 1993



*Surface impoundments for Geothermal Drilling Wastes

NOTE: This pie chart represents facilities which are required to obtain a Solid Waste Facilities Permit. Please refer to Chapter III Waste Stream Diversion, Figure III-1 for a listing of existing and planned diversion programs included in local jurisdiction's Source Reduction and Recycling Elements.

FigureVI-2

The issuance of a SWFP is the last step in the process. The Board concurs in the issuance of the permit if it finds it is to be consistent with standards mandated by the California Integrated Waste Management (IWM) Act. No facility can be expanded or sited that is not found to be in conformance with the Countywide Integrated Waste Management Plan and consistent with the General Plan; and approved by the local governing body through a recognized process (PRC 44009, 50000-50001). A review of each SWFP includes, but is not limited to, the facility's potential impact to prevent or significantly impair a jurisdiction's ability to successfully implement its diversion programs and meet the mandated waste diversion goals, and the present status of owner/operator's compliance with enforcement orders issued by the State Regional Water Quality Control Boards (RWQCB). Please see Chapter V, Partnerships with Local Governments and Industry, for a discussion of the newly-enacted Solid Waste Disposal Regulatory Reform Act, effective October 1, 1993, that will streamline landfill permitting requirements and eliminate interagency duplication.

Once a solid waste facility is permitted, the permit must be reviewed by the LEA at least once every five years to determine if it needs to be modified or revised (PRC 44015). All documents are reviewed

for compatibility with State standards, and to ensure that changes in the design or operation of the facility have not occurred without prior revision of the SWFP.

Three mega-landfill projects have been proposed for development in California to address the Southern California landfill capacity shortfall. The projects are: Eagle Mountain Landfill in Riverside County, Bolo Station Landfill in San Bernardino County, and the Mesquite Regional Landfill in Imperial County. Permitting mega-landfills is more complex and requires extensive technical review of environmental and health impacts. These projects are more complex due to the very large volume of waste they will be receiving. They will cover thousands of acres of land and total capacities are projected at hundreds of millions of tons. The anticipated operating life of these mega-landfills is from 50 to 100 years. State-of-the-art engineering design is needed to protect human health and the environment for many decades into the future. Air quality, water quality, and slope stability issues need to be evaluated on a larger scale and for a longer period of time than for other landfills in California.

The Board provides detailed technical review of issues related to the permitting of these large projects. Areas of particular concern are slope stability, seismic design, daily cover materials, gas generation and leachate generation over the life of the landfill. Board engineers and engineering geologists review technical reports and documents submitted by project proponents, as well as coordinate with LEAs and RWQCBs to resolve technical issues.

For a solid waste facility being proposed to be constructed on Native American land within the State of California, the Secretary for Environmental Protection (Secretary), California Environmental Protection Agency, may enter into negotiations with the Native American group to reach a cooperative agreement. In convening the negotiations, the Secretary must consult with appropriate state agencies to ensure protection of air quality, water quality, and that there is proper management of solid waste on Native American lands. The agreement defines the respective rights, duties, and obligations of the State and the Native American group concerning approval, development, and operation of the proposed facility. The Board evaluates these solid waste facility proposals to determine that stringent environmental standards are met and that public health and safety are protected. All documents are reviewed for functional equivalency with state standards and regulations.

During 1993, the Board's Permitting and Enforcement Committee undertook an ambitious project to evaluate the appropriate level of regulatory control for nontraditional solid waste facilities. Nontraditional facilities are those handling practices or facilities that handle or process solid waste other than landfills, transfer stations, composting facilities, and recycling facilities (material recovery facilities, intermediate processing facilities, and buyback facilities). Examples include: land spreading of sewage sludge and ash monofills. This project is an outgrowth of the Board's ongoing efforts to eliminate duplication of state solid waste management law with the laws of other state agencies. The development of a decision-making methodology, that will allow both regulators and the regulated community to determine the applicability of a SWFP, will provide clarity in implementing the IWM Act. Recommendations resulting from this project will provide certainty to the process of determining if a SWFP is required and will also focus on the appropriateness of the existing permitting structure.

As municipalities seek to achieve the IWM Act's diversion goals, materials previously disposed as mixed municipal waste in landfills are being segregated and processed for reuse or recycling. The difficulty faced by local and state regulators, as well as the regulated community, is that regulations for the permitting of solid waste facilities are antiquated, dating to an era when solid waste was handled primarily at two types of facilities: transfer stations and landfills.

In the fall of 1993, a working group was formed that includes representatives of the Board, State Water Resources Control Board (SWRCB), LEAs, and the California Environmental Protection Agency. Research was initiated into existing regulation and oversight, handling methods, hazards, and any other pertinent information necessary to draw conclusions about the appropriate level of regulation for various operations. In late 1993, the group began compiling information

on specific handling methods used to process contaminated soil, sludge, ash, construction and demolition wastes, agricultural wastes, and woody wastes.

Accomplishments

- The Board concurred in the revision of 25 SWFPs, modification of 15 SWFPs, and concurred in 27 new SWFPs for the 1993 calendar year.
- Updates to the Permit Desk Manual were developed to include regulatory changes. The manual provides guidance to: 1) LEAs in evaluating, writing, and processing SWFPs; and 2) facility operators in preparing permit applications. It also includes the primary documents required in support of an application for a new, revised, or modified permit.
- Board staff reviewed and provided comments on the Tentative Authority to Construct for the proposed Campo Landfill, to be sited on the Campo Indian Reservation in San Diego County. After public testimony on the proposal, the Board considered the item and decided the final determinations on the permit for the Campo Landfill would be deferred to its consideration of the Permit to Operate.

PERMITTING WASTE TIRE FACILITIES [PRC 42800 et seq.]

In 1990, the Legislature enacted comprehensive requirements for the storage and disposal of waste tires. These new requirements were intended to address potential fire and health risks posed by the growing number of tire piles in California. Development of regulations to implement these broad, new requirements has met with significant public comment.

The statute defines "major" and "minor" waste tire facilities (WTF). A major WTF permit is required to be issued by the Board before any stockpile of 5,000 or more waste tires can be established, or before any existing minor WTF (stockpile of from 500 to 5,000 waste tires) is expanded to the size of a major WTF. On or after July 1, 1994, no waste tires can be directed to or accepted by a minor WTF without a permit; and no waste tires can be directed to or accepted by a major WTF without a permit on or after September 1, 1994.

The objectives of regulations to implement these provisions are to: 1) clean up stockpiles of improperly disposed or abandoned waste tires; and 2) establish financial assurance requirements and operation standards for the management of stockpiles.

The Board adopted draft emergency regulations for permitting major and minor WTFs in 1991. The Board also worked in cooperation with other regulatory agencies and experts in the field to develop technical standards for the safe storage of whole and shredded waste tires.

Accomplishments

- The Board adopted regulations for the permitting of major and minor waste tire facilities that became effective November 3, 1993.

BOARD REVIEW OF ENVIRONMENTAL DOCUMENTS

[PRC 21002.1(d), 21104, 21153]

Every solid waste facility must be in full compliance with the California Environmental Quality Act (CEQA) before a permit may be approved by the Board. As a responsible agency under CEQA, the Board provides comments and direction to lead agencies for solid waste projects that require the Board's approval. These projects include, but are not limited to, new and revised SWFPs and closure and postclosure maintenance plans. The Board is also a commenting agency for projects that may have an effect on solid waste management in the state.

Board comments provide information that may help an agency address potential environmental impacts associated with the project. Proposed projects are reviewed for compatibility with state policy and standards (PRC 21005). Addressing these potential problem areas prior to permit development allows for more efficient permit processing.

To better serve lead agencies, including LEAs, a training program emphasizing CEQA requirements for solid waste facility projects will be developed and implemented in the spring of 1994.
In addition, guidelines designed to assist lead

agencies in making decisions regarding the applicability and process of CEQA to solid waste management projects will be developed and published in 1995.

Accomplishments

- The Board commented on 460 CEQA documents related to solid waste management during 1993. Of the 460 CEQA documents, 168 were related to solid waste facility projects.

INSPECTIONS OF SOLID WASTE FACILITIES

[PRC 43214, 43219(b), 44105(a)]

Every active solid waste facility in the state must be inspected monthly by an LEA. The LEA is required to take appropriate enforcement actions when violations of minimum standards or permit conditions are noted. With the signing of AB 1220 (Eastin, Chapter 656, Stats. 1993) by the Governor, the Board, in conjunction with the LEAs, is required to conduct inspections of each active landfill and waste transformation facility in California at least once every 18 months to ensure compliance with minimum standards and permit conditions. All other types of solid waste facilities will be inspected by Board staff at an appropriate frequency to determine the effectiveness of each LEA.

Violations noted during state and local inspections will continue to be the basis for possible inclusion in the Inventory of Solid Waste Facilities Which Violate State Minimum Standards (Inventory) [PRC 44104(a)(b)]. A facility has 90 days to correct such a violation. If the violation is not corrected within that time, the facility may be included in the Inventory. If the facility is included in the Inventory, the operator has one year to correct the violation before the LEA may initiate the process to revoke the facility's operating permit.

Board staff will continue to serve as "the first point of contact" for disposal or solid waste handling issues brought by the LEAs and/or the public. By providing guidance, technical assistance, and training opportunities to all LEAs, Board staff help to ensure the consistent application of laws and regulations at all solid waste facilities. Board staff are also available to assist the LEAs in assessing other sites within their respective jurisdictions that may need to be permitted by the Board.

Accomplishments

- Board staff conducted approximately 260 inspections of solid waste facilities in 1993, including pre-permit inspections.
- The Board contracted with Science Applications International Corporation to develop a Facility Evaluation Program Implementation Manual. The manual is designed to be the singular training and enforcement guidance document for the inspection of solid waste facilities by both LEAs and the Board. The manual is planned to be completed by the summer of 1994.
- The Board developed a complaint tracking system to enhance Board and LEA responsiveness to complaints made to Board staff, as well as concerns raised by the public regarding solid waste issues.

CLOSURE/POSTCLOSURE MAINTENANCE PLANS

[PRC 42800 et seq., 43509, 43600-43610]

Every owner or operator of a solid waste landfill that is required to be permitted and was operating on or after January 1, 1988, must submit a Closure Plan (CP) and Postclosure Maintenance Plan (PMP) to the Board, the LEA, and the RWQCB for approval. At the same time, the owner or operator is required to provide and continuously demonstrate to the Board and the LEA financial assurances to cover the costs of properly closing and maintaining a solid waste landfill for a 30-year period. Beginning September 1994, operators of major waste tire facilities will also be required to provide evidence of financial assurances adequate to cover the costs of closure of the facility.

The primary considerations for the plans are: 1) to ensure that there are sufficient technical and financial capability to properly close the landfill; and 2) to minimize postclosure maintenance while ensuring protection of public health and safety and the environment.

Regulations governing the CPs and PMPs are being revised to reflect the knowledge and experience gained by the Board on landfill closures since the regulations first came into effect three years ago. Revisions are also being made in an effort to streamline the CP and PMP approval process, allow for more efficient use of staff time, and ensure that strict environmental standards will be maintained. The Board will coordinate the revisions with the SWRCB to ensure there is no overlap or conflicts in landfill closure regulations.

Accomplishments

- The Board reviewed and approved 15 CPs and PMPs for solid waste landfills.
- Board staff initiated the development of technical language for revisions to the closure/postclosure plan regulations and plan to complete the language by the spring of 1994. The formal rulemaking process for the revisions will begin on completion of the technical language.
- The Board reviewed and approved 166 financial assurance demonstrations for solid waste landfills. Currently, approximately 300 facilities are demonstrating financial assurances, with total assurances in excess of $1.4 billion.

OPERATING LIABILITY

[PRC 42821, 43040]

Every operator of a disposal facility is required to provide assurance of financial responsibility for operating liability claims as a condition for the issuance, modification, revision, or review of a SWFP. Operating liability claims can be filed by a third party against an operator as a result of an accident that occurs at a solid waste disposal facility. These claims include compensation for bodily injury and/or property damage to the third party. The minimum assurance level is $1 million/occurrence, and $1 million annual aggregate for one facility up to $5 million/operator for five facilities or more.

Operators of major waste tire facilities are also required to provide evidence of financial responsibility adequate to cover damage claims arising out of the operation of the facility. For each facility permitted for 5,000 to 200,000 tires, the operator is required to provide coverage for $500,000 per occurrence and $500,000 annual aggregate. For each facility permitted for over 200,000 tires, the operator is required to provide coverage for $1 million/occurrence and $1 million annual aggregate.

Accomplishments

- The Board reviewed and approved assurances of financial responsibility for operating liability for 102 solid waste landfills. The Board currently has financial responsibility for operating liability demonstrations in excess of $108 million.

CLOSED, ILLEGAL, AND ABANDONED SITES

[PRC 44105(b)]

The Board is required to investigate closed, illegal, and abandoned (CIA) sites to determine if they pose a threat to human health and the environment. The objectives of this program are to: 1) identify all CIA sites and determine if any of these sites require administrative or corrective action; 2) assist LEAs in investigation and inspection of CIA sites; 3) determine applicable closure or remediation requirements; and 4) review and approve postclosure land-use activities at CIA sites.

Priority for investigations and follow up actions is based on a two-phase ranking system. The first ranking is based on sites that pose a high threat to human health and the environment. The second numerical ranking of CIA sites will be calculated by the Solid Waste Ranking System (SWRS). The SWRS was developed as part of the CIA site investigation program and will be used as a basis for determining corrective actions or orphan site expenditures (i.e., when responsible parties are unable or unwilling to implement necessary remediation). The Board has evaluated more than 60 orphan sites.

Information contained in a Solid Waste Assessment Test (SWAT) Report can be an important tool in evaluating the need for corrective action of CIA sites. A SWAT report is a technical document that makes a determination of whether hazardous constituents are migrating from a solid waste disposal site into state waters. The SWRCB is the

lead agency responsible for the SWAT program that requires all solid waste disposal sites to be ranked according to their threat to water quality. Review of SWAT reports is completed by the RWQCBs. Board staff will be evaluating the SWRCB's current SWAT list of solid waste disposal sites and making recommendations for prioritizing the RWQCBs' review of those SWAT reports.

Land-use development proposals on closed landfills that require modification or replacement of the barrier layer of the landfill's final cover must be submitted to the Board and LEA for review and approval. In the review of these proposed postclosure projects, the Board and LEAs assure the following are addressed: possible construction problems; hazards to public health, safety, and the environment; and, other factors that might have an adverse effect on the closed landfill. Board staff will continue to work with the regulated community and technical experts to develop and refine technologies for developing closed solid waste landfills.

Effective January 1, 1994, AB 2136 by Assemblymember Eastin (Chapter 655, Stats. 1993) provides Board funding to initiate the Solid Waste Disposal and Co-disposal Site Cleanup Program. This program is dedicated to the cleanup of orphan, abandoned, and illegal solid waste disposal sites to protect public health and safety and the environment.

To administer the program, the Board received a one-time start-up appropriation of $8 million in fiscal year 1993-94, and will receive $5 million annually, with an aggregate cap of $30 million. Funding for the program will be provided through the assessment of a per-ton fee on solid waste disposed of in the state. Fees collected will be deposited in the Solid Waste Disposal Site Cleanup Trust Fund. The Board will be authorized to expend funds for: cleanup or emergency actions; loans to responsible parties with the ability to repay; matching grants to local governments; abatement of illegal disposal sites; and grants to certified LEAs. Funds recovered from responsible parties and loan repayments will also be deposited in this fund and earmarked for site cleanup. Cleanups will be conducted in conjunction with ongoing enforcement by the LEAs to prevent a recurrence.

Accomplishments

- The Site Investigation Process (SIP) for investigation of closed, illegal, and abandoned (CIA) sites was adopted by the Board. The SIP provides standardized procedures to enhance efficient investigation of CIA sites. Approximately 25 CIA sites have undergone SIP investigations and have been provided first rankings. Numerical second rankings are being calculated by the Solid Waste Ranking System for sites with the highest threats to human health and the environment. These sites may be candidates for orphan site fund (AB 2136) expenditures.
- The *Site Investigation Process for Investigating Closed, Illegal, and Abandoned Disposal Sites*, an LEA Advisory, was prepared by Board staff. The advisory provides guidance for LEAs and the Board in investigations, prioritization, inspection, and enforcement of CIA sites.
- Documentation on landfill gas migratory behavior was compiled by Board staff to be used to develop a guidance document for use by city or county planning departments. The guidance document will serve to help these departments determine a setback distance on or surrounding closed solid waste facilities and appropriate land uses in the vicinity. Recommendations for the distance in which development should be allowed will be included in the guidance document.
- The Solid Waste Disposal and Co-disposal Site Cleanup Program (AB 2136) was initiated by the Board to cleanup orphan, abandoned, and illegal solid waste disposal sites. Expected to be operational by mid-1994, this program will include a contracting element, a grants element, and a loan element.

RESEARCH AND DEVELOPMENT

The Board's research and development program currently focuses on landfills and special waste management technologies listed below.

Landfill Gas

Landfill gas is a mixture of several gases that consist mostly of: methane, carbon dioxide, nitrogen, and oxygen. The remaining trace gases are normally found at concentrations of less than one percent by volume, and may include hydrogen sulfide, carbon monoxide, vinyl chloride, and benzene. The methane fraction of landfill gas can be burned to produce energy.

Uncontrolled migration of landfill gas represents a health and safety hazard to neighbors because of the explosive nature of the methane fraction and the presence of certain trace contaminant gases known or suspected to be human carcinogens (cancer-causing agents). Uncontrolled landfill gas emissions can also contribute to declining air quality in sensitive air basins.

The Board adopts regulations for monitoring and control of landfill gas migration. To ensure agency coordination and avoid regulatory overlap, these regulations are developed in consultation with the State Air Resources Board (ARB) and the Air Pollution Control Officers Association.

A landfill gas monitoring and control program was developed, based on the Board's adopted regulations. The program is generally initiated through an inspection of the disposal site to determine if landfill decomposition gases pose a potential hazard or nuisance. Past monitoring data are reviewed and current landfill gas migration levels are measured with a combustible gas indicator. These inspections are generally conducted by the LEA, with technical assistance provided by Board staff.

If the inspection results show that the landfill gas does pose a potential hazard or nuisance, or exceeds state standards, a comprehensive landfill gas monitoring and control system may be required. Technical guidance for the development of the system is provided to landfill operators by the Board in conjunction with ARB.

Accomplishments

- The Board adopted landfill gas monitoring and control regulations, that became effective in July 1993, to conform with the Subtitle D federal rules. These regulations require operators of municipal solid waste landfills to implement a routine methane gas monitoring program. For a complete discussion of the Subtitle D federal rules, please see Chapter V, Partnerships with Local Governments and Industry, Resource Conservation and Recovery Act.
- Board staff reviewed more than 25 plans for landfill gas monitoring and control systems for existing, new, and closed landfills in 1993. Investigations were conducted of more than a dozen landfill gas systems throughout the state to determine if landfill gas was migrating offsite or if other health or safety problems were occurring. Several problematic sites were jointly evaluated by Board staff and ARB staff. Among the notable landfill gas cases investigated by Board staff this year are: Southhampton Landfill in Solano County, where several homes were evacuated due to gas at the landfill boundary; and Heaps Peak Landfill in San Bernardino County, where landfill gas ignited and resulted in the evacuation of a building. Gas control and compliance activities are in full force at such sites.
- The Board contracted with the County of Orange and Argonne National Laboratory (ANL) to learn more about the generation and fate of landfill gas. A study will be conducted of the optimal designs for sampling migrating landfill gas onsite, and to develop a "mass balance" model of the gas, based on real situations at an operating landfill. A mass balance model determines the quantities of landfill gas generated over time, as well as quantities of gas that are: released to the air or groundwater; captured by a gas control system or transformation (energy production) facility; sequestered in air spaces between soil particles in the waste itself; or simply oxidized to other chemicals in the landfill mass.

  Staff from the County of Orange, ANL, and the Board began probe sampling experiments at the Olinda Landfill this year. Assisting in the project are the National Renewable Energy Laboratory in Colorado and UNOCAL. Landfill gas probes of three different but common designs have been placed at three different depths in the soil cover and in the mass of waste to determine which probe design and depth is optimal for the accurate

monitoring of landfill gas presence, concentration, and migration. Sampling of gas began in the fall of 1993. Results from the experiments will be available in late 1994. In order to develop the mass balance model, additional probes have been placed this year at the Olinda Landfill to study the sequestration, migration, and release patterns of landfill gas.

- Board staff coordinated with the ARB and the State Office of Environmental Hazard Assessment to evaluate the existing landfill gas dispersion models. These models will be used as the basis for development of a landfill gas dispersion model that will accept gas generation data from the mass balance model described above and produce data that will show if the trace gases pose a potential health threat. The results of this work will be available in 1995, together with user-friendly personal computer programs of the mass balance and trace gas models. These models can be used by landfill operators and regulators to determine the potential gas generation rates for energy recovery or landfill gas control systems design.

  During the development of the dispersion model, staff from the Board, in consultation with ARB staff, will establish procedures to promote agency coordination. These procedures will eliminate regulatory overlap without compromising environmental protection.

Alternative Landfill Cover

Concern over California's rapidly decreasing landfill capacity has caused landfill operators to seek more efficient ways to manage this vanishing resource. One conservation technique currently under investigation is the use of alternative daily cover (ADC) materials. In many cases, proposed ADC materials are already a component of the waste stream and would ultimately be disposed of in landfills anyway. Such an ADC material would be used in place of traditional native soils if certain performance standards were met. To meet these standards, the material must: 1) act as a barrier to the emergence or attraction of flies, rodents, or other vectors; 2) retard the progress of fires within the landfill; 3) control the escape of odors; and 4) prevent excess infiltration of surface water runoff. Using an ADC would serve two purposes: 1) it would preserve native soils for a higher use; and 2) it would conserve valuable landfill space. Additionally, it could provide landfill operators with an environmentally-sound and cost-effective alternative to hauling offsite soil to landfills lacking onsite native soil cover sources.

As a United States Environmental Protection Agency (US EPA) fully-approved state under federal Subtitle D, the Board is authorized to approve, on a case-by-case basis, the use of materials other than soil as ADC materials or as extenders for currently used cover materials. Please see Chapter V, Partnerships with Local Governments and Industry, Regulations, Resource Conservation and Recovery Act for a complete discussion of federal Subtitle D.

In May 1990, the Board adopted a document entitled, "The Procedural Guidance for the Evaluation of Alternative Daily Covers." This document outlines procedures for evaluating and approving ADC materials. Those procedures include: 1) preparation of a report by a landfill operator requesting a demonstration project that addresses questions asked in the guidance document; 2) Board staff and LEA approval of the demonstration project; 3) performance of a demonstration project and data collection by a landfill operator for a one year period minimum; 4) preparation of a final report at the conclusion of the demonstration project followed by Board staff and LEA review; and 5) formal Board and LEA approval of the ADC material through a revision to the SWFP. Additionally, the Board is developing performance standards for suitable materials for daily, intermediate, and final landfill cover.

Approximately 50 approved demonstration projects are in various stages of completion. The materials being evaluated in these projects include: chemically-fixed sewage sludge; treated oil field drilling muds; green material; synthetic blankets; and foam. Board staff will analyze the results from the demonstrations to determine if these types of alternative cover are feasible. In 1992, two alternative landfill cover demonstration projects, one using drinking water treatment sludge and the other using "Soil Seal" (a special manufactured material), received authorization by the Board and the LEA to continue to use these materials as daily cover at the approved sites on an ongoing basis. In

1993, four alternative landfill cover demonstration projects using green material were completed, evaluated as successful, and authorized by the Board and the LEA to be used on an ongoing basis at the approved sites.

To gather additional information on various cover materials, Board staff, in coordination with GeoSyntec Consultants, surveyed owners/operators of 352 landfills in California and received 117 responses. The questionnaire sent out was designed to identify which cover materials were being used or studied for use as landfill cover. The results from this questionnaire were used in the initial report, prepared under a Board contract with GeoSyntec Consultants on performance criteria for landfill covers.

Accomplishments

- An initial report, prepared under a Board contract with GeoSyntec Consultants, was received by Board staff and will be used in developing regulations for landfill cover performance standards. This report identifies and evaluates various materials that might be suitable for use as alternative cover at solid waste landfills including: green material; compost; co-compost; chemically-fixed sewage sludge; synthetic blankets; foam products; native soils; contaminated soils; auto shredder residue; ash; and rice straw. The report also recommends performance standards for various landfill cover designs necessary to protect human health and the environment.

  The results of the survey were received and became an important element in the preparation of the initial report. The purpose of the survey was to obtain information on various cover materials currently being used or studied for use as landfill cover. A questionnaire was mailed to owners/operators of active California landfills, local and state regulatory agencies, U S EPA, professional organizations, and leading universities in California.

  A final report on performance criteria for landfill covers is targeted for completion in early 1994.

Compost, Co-Compost, and Chemically-Fixed Sewage Sludge [PRC 42244]

Compost, co-compost, and chemically-fixed sewage sludge were among the materials evaluated in the initial report prepared under the above mentioned contract with Geosyntec Consultants. Board staff concurs with the following consultant's evaluation in using these materials as ADCs.

The consultant identified advantages and disadvantages in using these materials based on their individual physical and chemical properties. The main advantage of using these materials by themselves is that they have relatively good resistance to the penetration of water and they perform well in damp conditions. Disadvantages of using these materials include: 1) dust and fire problems may occur when these materials are dry; 2) hazardous and/or toxic constituents that remain in co-compost and sludge can leach out during infiltration of rainwater; and 3) composted municipal solid waste may contain pathogenic microorganisms can constitute a health hazard.

Use of these materials as a soil extender was also evaluated. The use of these materials when mixed with soil negated many of the disadvantages associated with using these materials alone. The advantages of using these materials as a soil extender are: 1) better control of fires; 2) reduced dust during application; and 3) less soil used.

To date, no landfill operator has requested a demonstration project to evaluate compost or co-compost as a daily landfill cover material, most likely because compost and co-compost is expensive to produce and too valuable to be disposed of into landfills.

Accomplishments

- Four alternative landfill cover demonstration projects using green material were completed, evaluated as successful, and authorized by the Board and the LEA to be used on an ongoing basis at the approved sites.
- One alternative landfill cover demonstration project using chemically-fixed sewage sludge was completed, evaluated as successful, and authorized by the Board and the LEA to be used on an ongoing basis at the approved site. The chemical fixation process consisted of treating sewage sludge with cement kiln

dust, lime kiln dust, and/or other alkaline reagents followed by a curing period. At the end of the process, a soil-like material was produced. Over a two year period, this soil-like material was applied to the entire active face of a solid waste landfill at the end of each operating day. During this period, extensive monitoring of the cover material showed that it performed satisfactorily to control fires, vectors, water penetration, erosion, and to prevent unsightliness. The monitoring also indicated there were no significant concerns with the use of this soil-like material as a daily cover. However, there were chemical fixation process operational concerns that should be monitored during production of the material including: 1) trace metal concentrations in the reagents used to process the sludge sometimes exceeded allowable standards; and 2) the release of ammonia and other volatile organic compounds may require implementation of Best Available Control Technology (BACT) in order for the facility to meet the stringent air quality regulations in California.

Rice Straw [PRC 42244.5]

Rice straw was added to the list of materials evaluated in the initial report prepared under the above mentioned contract with GeoSyntec Consultants. Rice straw is the hollow stem or stalk that remains following rice harvest. The use of rice straw alone was evaluated as an ADC material and given the lowest rating (unacceptable) in three categories: 1) ability to control fires; 2) ease of deployment in high winds; and 3) high flammability. Rice straw was also shown to have poor resistance to rainwater penetration as compared with materials traditionally used as a daily cover. These ratings are based on knowledge that rice straw is a very lightweight material and is susceptible to being blown by the wind, as well as being a highly combustible material. Furthermore, the results of the above mentioned GeoSyntec Consultants' survey (to identify cover materials being used or studied for use as landfill cover) indicated that none of the respondents had used or even considered rice straw as a cover material. In as much as no landfill operator has applied to the Board to perform an ADC demonstration project using rice straw, no actual field testing has been done to verify the above conclusions which are based on experience with similar materials and a comparison to performance standards.

The use of rice straw mixed with soil as an extender was also evaluated using the same methodology as above. This rice straw and soil mixture negated many of the disadvantages of using rice straw alone. The cumulative performance score achieved by the rice straw and soil mixture equaled the rating given green material which has been demonstrated in field studies to be acceptable for use as a daily cover.

Board staff support conducting a demonstration project to verify the previous conclusions. Mitigations to the troublesome properties of rice straw alone or used in various rice straw/soil blends should be evaluated when a landfill operator proposes conducting such a project.

In the fall of 1993, the Board participated in the newly formed Interagency Rice Regulatory Committee. This committee is comprised of state, local, and federal agencies. The purpose of this committee is to promote communication with the rice industry concerning implementation of new environmental regulatory initiatives and to clarify existing regulatory requirements. In this forum, Board representatives have had the opportunity to discuss a broad range of solid waste management issues that may have a direct or indirect impact upon the rice industry in this state. One issue of interest to both the Board and the rice industry relates to using rice straw as an ADC material for solid waste landfills. Additional discussions between the Board, the rice industry, and solid waste facility operators will be necessary to determine the level of interest, economic feasibility, and technical viability of pursuing the use of rice straw as an ADC material.

Metals Recovery Residue [PRC 42171]

Metals recovery residue (commonly known as auto shredder residue) was also evaluated for use as a landfill cover material in the above mentioned initial report prepared by GeoSyntec Consultants. Auto shredder residue is the material that remains after metallic articles, such as auto bodies, appliances, and sheet metal are shredded and the

metals are recovered. This material consists mainly of foam, plastics, rubber, glass, and other nonmetallic constituents. Auto shredder residue must be treated and classified as nonhazardous prior to its being disposed in solid waste landfills.

In GeoSyntec's initial report, concerns were raised regarding flammability, water infiltration, small pieces of residues becoming wind blown, and the potential for hazardous and/or toxic substances contaminating the residue (i.e., PCBs; metals such as cadmium, exhalent chromium, copper, lead, mercury, nickel, and zinc; and oils). Board staff share these concerns, as well. In most cases, laboratory data indicated that proper treatment of the residue stabilized the metals in the residue. Consistent monitoring of the treated residue is needed to ensure the treatment process is functioning properly. Flammability of the treated residue could become a problem if the material were allowed to become too dry. Since the treatment process is an aqueous one and the freshly generated material is wet, it is not expected to dry to the point of becoming a problem under normal landfill disposal operations.

The use of treated auto shredder residue mixed with soil as an extender was also evaluated as an ADC. Auto shredder residue used as an extender was found to be viable. The addition of soil acts as an inhibitor to the spread of fire, thus mitigating that threat. Field testing would be necessary to establish the most effective blend of soil and auto shredder residue.

Board staff collaborated with an auto shredder in southern California to develop the protocol for and review the results of a small pilot study at the auto shredder's facility. The pilot study produced useful chemical and physical data on the auto shredder residue. The shredder facility management is seeking a cooperative landfill operator to conduct a field demonstration project to verify the suitability of auto shredder residue as an ADC.

In an unrelated project, Board staff authorized a demonstration project to evaluate the use of auto shredder residue as a daily cover under actual field operating conditions. However, the demonstration project was terminated by the project proponent, for reasons not related to the suitability of the material, before any field verification could be accomplished. Based on laboratory data, Board staff concluded auto shredder residue mixed with soil as an extender could function as a suitable daily cover material but additional fire testing would be needed; monitoring would be required to ensure the treated material was nonhazardous; and conclusions based on laboratory data should be verified under field operating conditions.

Tire Pile Fire Control Standards and Training

With California's total waste tire inventory exceeding 25 million tires, distributed in more than 140 waste tire piles in the state, tire piles present a significant safety issue for firefighters. Several spectacular tire pile fires have been reported nationwide in recent years. These tire fires release noxious and toxic emissions into the air and contamination into the soil.

To mitigate potential fire risks posed by the growing numbers of tire piles in California, the Board contracted with the California Office of State Fire Marshal (OSFM) to:

- develop a training curriculum that will be offered to local fire authorities for fire prevention and suppression at waste tire facilities;
- identify waste tire facilities that are not included in the Board's registration database; and
- oversee laboratory and field research to be conducted by the University of California at Berkeley (UCB), Fire Test Laboratory.

OSFM has already developed a training curriculum that will be offered to local fire authorities throughout the state. The curriculum addresses appropriate fire laws, fire prevention measures, fire suppression methods, and environmental issues relating to waste tire piles. A training video has also been prepared for class instruction. OSFM will be spending up to 12 months teaching eight-hour classes throughout the state. Classes are scheduled to begin in the spring of 1994.

The waste tire facilities identified in the database are believed to represent only a portion of the total number of waste tire facilities in the state. To contact all facilities that may require a permit and to achieve the goal of the OSFM's training program (identify and train all local fire authorities with waste tire facilities), the OSFM will request the approximately 1,100 local fire authorities in the

state to furnish information regarding the location of all waste tire facilities within their jurisdiction. OSFM has provided the Board with a partial update of these facilities. This information will be integrated into the Board's existing database.

In addition to administering the training curriculum, OSFM will act as liaison to local fire authorities and respond to waste tire pile fire emergencies.

UCB's Fire Test Laboratory will have the following objectives:

- to validate technical standards in the Board's proposed waste tire facility regulations;
- to provide local fire authorities with technical information to aid in establishing site-specific storage requirements for whole and shredded waste tires piles; and
- to provide information that can be incorporated into the training program.

The laboratory and field research findings by UCB will be incorporated into the training program. Video tapes of the experiments will also be used. The findings are expected in late spring of 1994. The contract completion date is mid-1995.

Appendix A
List of Acronyms

AB	Assembly Bill
ADC	Alternative Daily Cover
ANL	Argonne National Laboratory
ARB	State Air Resources Board
CAL/EPA	California Environmental Protection Agency
CALMAX	California Materials Exchange
Caltrans	California Department of Transportation
CDE	California Department of Education
CDF	California Department of Forestry and Fire Protection
CEQA	California Environmental Quality Act
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CIA Sites	Closed, Illegal, and Abandoned Sites
CIWMP	Countywide Integrated Waste Management Plan
CP	Closure Plan
CRRF	California Resource Recovery Facility
CSE	Countywide Siting Element
CSU	California State University
DGS	State Department of General Services
DHS	State Department of Health Services
DOF	State Department of Finance
DOM	Caltrans Department of Maintenance
DPR	State Department of Parks and Recreation
DPTD	Diversion Program Tracking Database
DTSC	State Department of Toxic Substances Control
EA	Enforcement Agency
EAC	Enforcement Advisory Council
EIR	Environmental Impact Report
EPP	Enforcement Program Plan
FY	Fiscal Year
GC	Government Code
HDPE	High-Density Polyethylene
HHW	Household Hazardous Waste
HHWE	Household Hazardous Waste Element
IAA	Interagency Agreement
IWM	Integrated Waste Management
IWM Act	California Integrated Waste Management Act
LB	Pound
LEA	Local Enforcement Agency
LTC	Laser Toner Cartridge
MRF	Material Recovery Facility
MSW	Municipal Solid Waste

NDFE	Nondisposal Facility Element
NOFA	Notice of Funds Available
NTM&R	New Technology, Materials & Research
OAL	State Office of Administrative Law
OCC	Old Corrugated Container
ORE Act	California Oil Recycling Enhancement Act
OSFM	California Office of the State Fire Marshal
PARRT	Permit and Regulatory Reform Team
PCB	Polychlorinated Biphenyl
PCC	Public Contract Code
PETE	Polyethylene Terephthalate
PIA	State Prison Industry Authority
PMP	Postclosure Maintenance Plan
PRC	Public Resources Code
PSA	Public Service Announcement
QPL	Qualified Products List
RAC	Rubberized Asphalt Concrete
RCRA	Resource Conservation and Recovery Act
RMDZ	Recycling Market Development Zone
RPPC	Rigid Plastic Packaging Container
RTC	Revenue and Taxation Code
RWQCB	State Regional Water Quality Control Board
SB	Senate Bill
SIP	Site Investigation Process
SRRE	Source Reduction and Recycling Element
SWAT	Solid Waste Assessment Test
SWDRR Act	Solid Waste Disposal Regulatory Reform Act
SWF	Solid Waste Facility
SWFP	Solid Waste Facilities Permit
SWGS	Solid Waste Generation Study
SWRCB	State Water Resources Control Board
SWRS	Solid Waste Ranking System
TR Act	California Tire Recycling Act
UCB	University of California at Berkeley
US EPA	United States Environmental Protection Agency
WRAP	Waste Reduction Awards Program
WTF	Waste Tire Facilities

Appendix B
Glossary of Terms

These definitions are only for understanding the 1993 Annual Report. Some were derived from statutes and regulations, others were developed by Board staff for this report.

Asbestos Containing Waste (ACW): waste that when dry can be broken, crumbled, pulverized, or reduced to powder by hand pressure and contains more than one percent (1%) asbestos by area as determined by using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM).

Biosolid: treated sewage sludge. See "Sludge, Sewage."

Block Grant: a type of federal aid made available to states, cities, or counties (a federal block grant) or by a state (a state block grant) to cities and/or counties for improving community services such as education or health and safety programs.

Buyback Facility: a central point for collecting specific recyclables where cash payments are given; some materials may be accepted without payment.

Chemically-Fixed Sewage Sludge: soil-like material produced from raw or digested sewage that has been chemically stabilized to immobilize toxic materials and kill pathogens and parasites.

Co-Compost: the product of simultaneous composting of two or more compost feedstocks types, often including sewage sludge and green materials or mixed solid waste.

Compliance Waiver: with respect to the Rigid Plastic Packaging Container Program, a temporary or conditional exemption from meeting the program's statutory requirements.

Compostable: organic material, such as food, green material, sludge, manure, or mixed waste paper that can be composted (i.e., will readily undergo biological decomposition when subjected to moisture and air at temperatures conducive to biological growth).

Conformance Finding: a determination made by the Board regarding whether a proposed facility that requires a solid waste permit, or modification or revision to the permit, is consistent with plans and resolutions governing local land use. When a Board approved Countywide Integrated Waste Management Plan (CIWMP) is absent, the Board also makes a determination of a facility's potential impact on participating jurisdictions' ability to meet the overall California Integrated Waste Management Act's mandate to decrease disposal by 25 percent by 1995 and 50 percent by 2000. When a Board-approved CIWMP exists for a given area, the Board makes a determination that a proposed facility has been identified in either the Countywide Siting Element, or Nondisposal Facility Element (whichever is applicable); or makes a determination that the process modifying the applicable element to incorporate the proposed facility has been completed.

County of Origin: includes all incorporated cities and the unincorporated area within a county's border or limits in which solid waste originated.

Countywide Integrated Waste Management Plan (CIWMP): the principal local planning document for ensuring that the requirements of the California Integrated Waste Management (IWM) Act of 1989 are met. Each CIWMP is composed of a Source Reduction and Recycling Element, Household Hazardous Waste Element, Countywide Siting Element, Nondisposal Facility Element, and Summary Plan.

Countywide Siting Element (CSE): an element of a Countywide Integrated Waste Management Plan (CIWMP), prepared by each county that identifies landfill and transformation facilities necessary to ensure a minimum of 15 years permitted capacity; describes criteria in siting facilities to ensure environmentally safe disposal and preserve public safety; and identifies strategies for maintaining adequate disposal capacity.

Curbside Collection: a residential service for collection of recyclable materials where residents place their recyclables on the curb (or, for multi-family dwellings, in centrally located receptacles) for collection.

Disposal-Based: refers to the way the mandated diversion goals (25 percent by 1995 and 50 percent by 2000) are calculated and the way compliance with the goals is measured. Under the disposal-based system, jurisdictions estimate the amount of solid waste they will generate in a year, and then calculate the maximum disposal tonnage allowable for that year. In 1995 the maximum disposal tonnage allowable will be 75 percent of the total estimated generation, and in 2000 the amount allowable will be 50 percent of the total estimated generation. Jurisdictions will be in compliance if the actual amount of disposal at permitted landfills and transformation facilities during the year is less than or equal to the calculated maximum disposal tonnage goal for that year.

Drilling Mud: a byproduct from drilling oil, gas, geothermal, or water production wells. Fresh drilling mud may be composed of bentonite clay, water, flocculants, sealants, and barite. Drilling mud may be water based, which is the most common, or oil based. Oil based drilling muds are generally considered hazardous.

End-User: a manufacturer that consumes secondary materials as a feedstock in the production of consumer goods.

Fee-Based Incentive Options: a financial incentive to support secondary materials market development and/or promote the integrated waste management hierarchy. For example, front-end fees may be assessed on products and packaging prior to consumption, and back-end fees may be assessed in conjunction with waste management services after products are consumed and waste materials are generated.

Feedstock, Compost: any decomposable organic material used as a basis for the production of compost. Additives and amendments are not feedstock.

Feedstock, Industrial: raw material (virgin or secondary) used in a manufacturing process.

Ferrous Metal: a metallic alloy in which iron is the major constituent and is easily separated from other materials with magnets.

Grasscycling: the waste prevention practice of leaving grass clippings on a lawn while mowing instead of collecting them for disposal.

Green Material: any wastes separated at their source of generation which are derived from plant material, including, but not limited to: leaves, grass clippings, weeds, tree trimmings, or shrubbery cuttings. Green material does not include plant material that is classified as food material.

HDPE: a thermo plastic resin (high-density polyethylene) with longer chains and fewer side branches than low density polyethylene. HDPE belongs to the family of polyolefins and floats in water. It is used in the manufacture of consumer products, such as: bottles for milk, water, juice, bleach, detergents, motor oil, and margarine tubs. Also used in landfill liners and landfill caps.

Household Hazardous Waste Element (HHWE): an element of a Countywide Integrated Waste Management Plan (CIWMP) prepared by each local jurisdiction (incorporated cities and the unincorporated area of counties) that identifies the means by which each jurisdiction will reduce, safely collect, recycle, treat, and dispose of household hazardous waste.

Incentive Fee: a fee levied on an activity to support secondary materials market development and/or promote the integrated waste management hierarchy. For example, front-end fees may be assessed on products and

packaging prior to consumption, and back-end fees may be assessed in conjunction with waste management services after products are consumed and waste materials are generated.

Incentive Fee Claim: with respect to the Used Oil Program, a written request to the Board by an industrial generator, curbside collection program, or certified used oil collection center for oil transported by a used oil hauler to a certified used oil recycling facility; or by an electrical utility generating electricity for payment of incentive fees on used lubricating oil. The current fee is four cents per quart.

Inert Waste (Inerts): a solid waste that does not in itself pose a threat to the environment. Examples include, but are not limited to: rock, concrete, brick, sand, soil, and dried asphalt.

Integrated Waste Management (IWM): a holistic approach to waste resource management that focuses on the generation and handling of waste using a hierarchy of preferred options that include: waste prevention (source reduction), recycling and composting, transformation, and finally, land disposal.

Intermediate Processing Facility: a facility where source-separated, co-mingled recyclables are sorted and processed, by hand or by use of machinery, for the purposes of recycling.

Landfill: a disposal site designed and constructed to protect public health, safety, and the environment from hazards associated with waste disposal.

Landfill Cover Material: A material that provides a barrier to flies, rodents, or other vectors; prevents the progress of fire within the landfill, the escape of odor, and excess infiltration of surface water runoff.

Landfill Gas Migration: the movement of landfill gas away from the refuse where it is being generated and through the surrounding soil. Migration is governed by two basic mechanisms: convection and diffusion. Landfill gas moves vertically through soil and cracks, laterally through course textured soil if vertical migration has been restricted, and along paths of least resistance until a vertical opening permits release to the atmosphere.

Leachate: liquid that has come into contact with or percolated through solid waste and may contain extracted, dissolved, or suspended materials.

Local Enforcement Agency (LEA): a local agency certified by the Board to enforce state solid waste laws and regulations, and implement Board policies. An LEA is authorized to permit and inspect solid waste facilities (SWF), require operator compliance, and otherwise oversee solid waste handling and storage activities at permitted, closed, abandoned, exempt, illegal, and inactive SWFs. The LEA is solely responsible for carrying out solid waste enforcement in its jurisdiction, working independently of the operating unit of the local governing body.

Local Jurisdiction: each county, including incorporated and unincorporated areas, and each incorporated city within the state.

Local Task Force: convened every five years by each county, which is not a city and county, to assist in coordinating the development of city Source Reduction and Recycling Elements (SRRE), county SRREs, and Countywide Siting Elements. Membership is determined by the county and by a majority of the cities within the county which contain a majority of the population of the incorporated area of the county.

Major Waste Tire Facility: a waste tire facility where, at any time, a sum of 5,000 or more waste tires are or will be stored.

Market Development: efforts which strengthen end user demand for secondary (recyclable) materials or consumer demand for products made from secondary materials.

Material Recovery Facility (MRF): a solid waste facility where secondary materials are separated and sorted from mixed refuse, by hand or by use of machinery, for the purposes of recycling, composting, or transformation.

Materials Exchange: a catalog or electronic database which promotes transfer of materials primarily between businesses, schools, and/or other institutions that otherwise might have been discarded; or to request materials for reuse, recycling, or manufacturing feedstock.

Minimum (Recycled)-Content Requirements: laws requiring that specified products contain specified levels of recycled-content.

Minimum Standard(s): a level of adequacy for the design, operation, maintenance, and closure of solid waste facilities; and for removal equipment design and removal frequencies for solid waste storage and handling.

Minor Waste Tire Facility: a waste tire facility where, at any time, a sum of 500 or more, but less than 5,000, waste tires are or will be stored. However, a minor waste tire facility does not include a tire dealer or an automobile dismantler, as defined in Sections 220 and 221 of the Vehicle Code, who stores tires on the dealer's or dismantler's premises for less than 90 days if not more than 1500 waste tires are ever accumulated on the dealer's or dismantler's premises.

Mulching: the practice of layering organic material (usually shredded yard trimmings, straw, decorative bark, or compost) on top of the ground to insulate and protect it from erosion, temperature extremes, moisture loss, and weed growth.

Municipal Solid Waste (MSW): solid waste generated at residences, commercial establishments, and institutions. In California, MSW includes construction and demolition debris and automobile scrap; the United States Environmental Protection Agency does not include these materials.

Nondisposal Facility: a location where solid waste material is handled, but not disposed. Examples are transfer stations and material recovery facilities.

Nondisposal Facility Element (NDFE): an element of a Countywide Integrated Waste Management Plan (CIWMP), developed by each local jurisdiction (incorporated cities and the unincorporated area of counties), that identifies and describes the solid waste handling facilities a jurisdiction is or will be using to reach the mandated waste diversion goals.

PETE: a thermo plastic resin (polyethylene terephthalate) formed by condensing ethylene glycol and therephthalic acid. Because of its low gas permeability, it is used primarily in the manufacture of soda bottles and other packaging applications (e.g., edible oil and peanut butter containers).

Postclosure Maintenance: monitoring and upkeep of a landfill for a minimum of 30 years after closure. Postclosure maintenance continues until the operator demonstrates that the site no longer poses a threat to health and safety and the environment. Postclosure maintenance includes, but is not limited to, maintenance of the final site face, the final cover, site security, groundwater monitoring, and landfill gas monitoring.

Postconsumer Material: a finished product which would normally be disposed as solid waste by a business or residence, having completed its intended end-use and product life cycle. Excludes materials generated by industrial or manufacturing processes.

Price Preference: in the context of recycled products procurement, an additional amount paid compared to the lowest bid or price quoted by suppliers offering non-recycled products. The maximum amount allowed for different prices is usually defined as a percentage of the lowest bid or price quoted by suppliers offering non-recycled products. Usually applies only to federal, state and local government agency procurement.

Procurement: in the context of integrated waste management, the purchase of recycled-content products in an attempt to expand market demand for these materials, thereby providing an economic incentive to divert materials from disposal.

Project Proponent: the person or organizational entity proposing a project, including an individual, firm, association, political subdivision, government agency, municipality, public or private corporation, or any other entity.

Purchase Preference: in the context of recycled products procurement, procedures and specifications which favor purchase of recycled products in lieu of comparable non-recycled products, when the recycled products meet applicable quality and availability requirements, and do not cost more than the comparable non-recycled products. Usually applies only to federal, state, and local government agency procurement.

Regional Agency: for purposes of integrated waste management, the governing entity created by a voluntary agreement among cities and/or counties to carry out mandated diversion goals (25 percent by 1995 and 50 percent by 2000).

Regionalization: an integrated waste management (IWM) option that results in two or more jurisdictions within a specific region sharing facilities, equipment, labor, transportation, and/or management.

Resin: solid or semi-solid, viscous organic substances used as raw materials in the manufacture of varnishes, lacquers, and plastics.

Resource Recovery: the retrieval and use of materials from the waste stream. These recovered materials may be used in the manufacture of new recycled products, converted into fuel for energy recovery, or used directly in a transformation process for energy recovery.

Rigid Plastic Packaging Containers: a plastic package having a relatively inflexible finite shape or form, with a capacity between eight ounces and five gallons (or equivalent volumes), and that is capable of maintaining its shape while holding other products (e.g., bottles, cartons).

Rubberized Asphalt Concrete (RAC): used in highway construction or maintenance applications, RAC is asphalt concrete that contains ground tire rubber in the asphalt binder (wet process) or as a partial substitute for aggregate (dry process).

Secondary Material: recyclable material that, after having undergone requisite processing, may be used as a substitute for primary (virgin) raw material in product manufacturing.

Set Aside: the allocation of a percentage of budgeted funds for procurement of recycled products to stimulate markets and create a stable market share for recycled products.

Sludge, Drinking Water Treatment: any residue removed from fresh water (drinking water), whether in a dry, semi-dry, or liquid form.

Sludge (Biosolid), Sewage: a solid or semi-solid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to: domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated from the burning of sewage sludge in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.

Solid Waste Facility (SWF): a facility which transfers, treats, processes, composts, transforms, or disposes solid waste.

Source Reduction: see "Waste Prevention."

Source Reduction and Recycling Element (SRRE): an element of a Countywide Integrated Waste Management Plan (CIWMP), developed by each local jurisdiction (incorporated cities and the unincorporated area of counties), identifying: the quantity and types of waste generated, diverted, and disposed; the diversion programs evaluated and chosen by the local jurisdiction to achieve the 25 percent and 50 percent diversion mandates; and the disposal capacity available and needed by the local jurisdiction for the next 15 years.

Source Separated: recyclable or compostable materials segregated from other materials in the waste stream at the point of generation.

Summary Plan: describes a county's or regional agency's goals, policies, and objectives, as determined by the Local Task Force, for coordinating countywide and regionwide diversion programs, marketing strategies, and disposal strategies for the medium-term (1996-2000) planning period.

Synthetic Blanket: an artificial material, usually a fabric or tarpaulin, used to cover the open or working surface of a landfill.

Tradable Credit: in the context of recycling market development, a market-based mechanism, used in conjunction with a regulatory program, that awards salable credits to those regulated parties exceeding the regulatory requirements, and allows other regulated parties to meet the regulatory requirements by purchasing credits.

Transfer/Processing Station: includes facilities used to receive; temporarily store, separate, convert, or otherwise process solid wastes; or to transfer the solid wastes directly from smaller to larger vehicles for transport; and facilities used for transformation.

Transformation: processes including incineration, pyrolysis, distillation, gasification, or biological conversion other than composting.

Uniform Base-Year Adjustment Method: a formula which adjusts a jurisdiction's solid waste generation amount to account for changes in population, economics, and other factors.

Unit Pricing: a rate structure for solid waste removal services that charges generators progressively more for each additional unit of waste generated, rather than a flat fee for unlimited services.

Used Tire: see "Waste Tire."

Virgin Material/Primary Material: raw material used in product manufacturing derived directly from a natural resource such as ore, timber, petroleum, or natural gas.

Waste Prevention (Source Reduction): any action undertaken by an individual or organization to eliminate or reduce the amount or toxicity of materials before they enter the municipal solid waste stream. This action is intended to conserve resources, promote efficiency, and reduce pollution.

Waste Reduction: the combined efforts of waste prevention (which includes reuse), composting, and recycling practices.

Waste Stream: the flow of solid waste from homes, businesses, institutions, and manufacturing plants that must be reused, recycled, composted, incinerated, or disposed in landfills.

Waste Tire: a tire that is not on the wheel of a vehicle and is no longer suitable for its original intended use because of wear, damage, defect or deviation from the manufacturer's original specifications, including, but not limited to, all used tires, altered tires, recappable casings, and scrap tires. Waste tire includes tires that have been altered by processes including, but not limited to, shredding, chopping, and slicing.

Appendix C

California Integrated Waste Management Board List of Certified Local Enforcement Agencies

ALAMEDA COUNTY
Environmental Health Department
Solid Waste
Local Enforcement Agency
80 Swan Way, Room 210
Oakland, CA 94621

Rafat A. Shahid
(510) 271-4300

CITY OF BERKELEY
CIWMB Enforcement Agency
Permitting & Enforcement Division
8800 Cal Center Drive
Sacramento, CA 95826

H. Thomas Unsell
(916) 255-2298

ALPINE COUNTY
Mono Co. is the LEA for Alpine Co.
See Mono Co. for LEA information

AMADOR COUNTY
County Health Department
Solid Waste
Local Enforcement Agency
108 Court Street
Jackson, CA 95642

Dr. James McClenahan, M.D
Health Officer
(209) 223-6407

BUTTE COUNTY
County Health Department
Solid Waste
Local Enforcement Agency
18 B County Center Drive
Oroville, CA 95965

Tom Reid, Director
(916) 538-7282

CALAVERAS COUNTY
County Health Department
Solid Waste
Local Enforcement Agency
891 Mountain Ranch Rd.
San Andreas, CA 95249

Wes Gebb, Director
(209) 754-6399

COLUSA COUNTY
County Health Department
Environmental Health Division
Solid Waste
Local Enforcement Agency
251 East Webster Avenue
P.O. Box 610
Colusa, CA 95932

William Cullen, Interim Director
(916) 458-7717

CONTRA COSTA COUNTY
Health Services Department
Environmental Health Division
Solid Waste
Local Enforcement Agency
20 Allen Street
Martinez, CA 94553

Dr. William Walker, M.D.
Medical Director
(510) 370-5010

CITY OF PITTSBURG
Solid Waste Management Division
Local Enforcement Agency
P.O. Box 1518
Pittsburg, CA 94565

Yolanda Lopez
Assistant City Manager
(510) 439-4850

DEL NORTE COUNTY
Glenn Co. is the LEA for Del Norte Co.
See Glenn Co. for LEA information

EL DORADO COUNTY
Building Department
Solid Waste
Local Enforcement Agency
Placerville, CA 95667

Bill Carey, Acting Chief
Building Official
(916) 621-5315

FRESNO COUNTY
Community Health Department
Solid Waste
Local Enforcement Agency
1221 Fulton Mall, Brix Building
P.O. Box 11867
Fresno, CA 93775

Gary M. Carozza, Director
(209) 445-3270

GLENN COUNTY
Also LEA for Trinity and Del Norte Counties
Health Services Department
Solid Waste
Local Enforcement Agency
240 North Villa Avenue
Willows, CA 95988

Mike Cassetta, Director
(916) 934-6582

HUMBOLDT COUNTY
County Health Department
Environmental Health Division
Local Enforcement Agency
100 "H" Street, Suite 100
Eureka, CA 95501

Jeffrey W. Arnold, Director
(707) 445-6215

IMPERIAL COUNTY
Department of Health Services
Division of Environmental Health
Solid Waste
Local Enforcement Agency
939 Main Street, Courthouse
El Centro, CA 92243

Tom Wolf, Director
(619) 339-4203

INYO COUNTY
Department of Environmental Health Services
Solid Waste
Local Enforcement Agency
168 N. Edwards Street
P.O. Box 427
Independence, CA 93526

Robert L. Kennedy, Director
(619) 878-2411, Ext. 2233

KERN COUNTY
Environmental Health Services Dept.
Solid Waste
Local Enforcement Agency
2700 "M" Street, Suite 300
Bakersfield, CA 93301

Steve McCalley, Director
(805) 861-3636

KINGS COUNTY
County Health Department
Solid Waste
Local Enforcement Agency
330 Campus Drive
Hanford, CA 93230

Keith Winkler, Director
(209) 584-1411, Ext. 2626

LAKE COUNTY
Environmental Health Division
Solid Waste
Local Enforcement Agency
922 Bevins Court
Lakeport, CA 95453-9739

Martin Winston, Director
(707) 263-2222

LASSEN COUNTY
Also LEA for Modoc, Plumas, & Sierra Counties
County Health Department
Solid Waste
Local Enforcement Agency
555 Hospital Lane
Susanville, CA 96130

Doug Ames, Director
(916) 257-8311, Ext. 183

LOS ANGELES COUNTY
Department of Health Services
Solid Waste
Local Enforcement Agency
313 N. Figueroa Street
Los Angeles, CA 90012

Robert C. Gates, Director
(213) 974-8101

CITY OF LONG BEACH
Department of Health & Human Services
Bureau of Environmental Health
Hazardous Materials Division Solid Waste
Local Enforcement Agency
2525 Grand Avenue
Long Beach, CA 90815

Donald Cillay, Bureau Manager
(310) 570-4130

CITY OF LOS ANGELES
Environmental Affairs Department
Solid Waste
Local Enforcement Agency City Hall
200 N. Spring Street, Room 1500
Los Angeles, CA 90012

Lillian Kawasaki, General Manager
(213) 237-0352

CITY OF WEST COVINA
Waste Management Enforcement Agency
Solid Waste
Local Enforcement Agency
1444 West Garvey Avenue, South
West Covina, CA 91790

Steve Samaniego, Manager
(818) 814-8468

MADERA COUNTY
Environmental Health Department
Solid Waste
Local Enforcement Agency
135 W. Yosemite Avenue
Madera, CA 93637

James Blanton, Director
(209) 675-7823

MARIN COUNTY
Environmental Health Services
Solid Waste
Local Enforcement Agency
Marin County Civic Center, Room 283
San Rafael, CA 94903

Ed Stewart, Director
(415) 499-6907

MARIPOSA COUNTY
San Benito Co. is the LEA for Mariposa Co.
See San Benito Co. for LEA information

MENDOCINO COUNTY
Public Health Department
Division of Environmental Health
Solid Waste
Local Enforcement Agency
880 North Bush Street, Courthouse
Ukiah, CA 95482

Gerald F. Davis, Director
(707) 463-4466

MERCED COUNTY
Department of Public Health
Division of Environmental Health
Solid Waste
Local Enforcement Agency
385 East 13th Street
P.O. Box 471
Merced, CA 95340

Jeff Palsgaard, Director
(209) 385-7391

MODOC COUNTY
Lassen Co. is the LEA for Modoc Co.
See Lassen Co. for LEA information

MONO COUNTY
Also LEA for Alpine County
County Health Department
Solid Waste
Local Enforcement Agency
P.O. Box 476
Bridgeport, CA 93517

Jack Bertman, Health Officer
(619) 932-7485

MONTEREY COUNTY
County Health Department
Division of Environmental Health
Solid Waste
Local Enforcement Agency
1270 Natividad Road
Salinas, CA 93906

Walter Wong, Director
(408) 755-4540

NAPA COUNTY
Division of Environmental Health
Solid Waste
Local Enforcement Agency
1195 Third Street, Room 101
Napa, CA 94559

Ralph Hunter, Program Manager
(707) 253-4269

NEVADA COUNTY
Department of Environmental Health
Solid Waste
Local Enforcement Agency
950 Maidu Avenue
P.O. Box 6100
Nevada City, CA 95959-6100

Tim Snellings, Director
(916) 265-1452

ORANGE COUNTY
Health Care Agency
Environmental Health Division
Solid Waste
Local Enforcement Agency
2009 E. Edinger Avenue
Santa Ana, CA 92705

Bob Merryman, Director
(714) 667-3771

PLACER COUNTY
Department of Health & Medical Services
Solid Waste
Local Enforcement Agency
11454 "B" Avenue
Auburn, CA 95603

Richard Swensen, Director
(916) 889-7335

PLUMAS COUNTY
Lassen Co. is the LEA for Plumas Co.
See Lassen Co. for LEA information

RIVERSIDE COUNTY
County Health Services Agency
Department of Environmental Health
Solid Waste
Local Enforcement Agency
1737 Atlanta Avenue, Building "H"
Riverside, CA 92507

John Fanning, Director
(909) 358-5316

SACRAMENTO COUNTY
Environmental Management Department
Environmental Health Division
Solid Waste
Local Enforcement Agency
8475 Jackson Road, Suite 230
Sacramento, CA 95826

Mel Knight, Director
(916) 386-6168

SAN BENITO COUNTY
Also LEA for Mariposa County
County Health Department
Environmental Health Division
Solid Waste
Local Enforcement Agency
439 Fourth Street
Hollister, CA 95023

Robert Shingai, Program Manager
(408) 636-4035

SAN BERNARDINO COUNTY
Department of Environmental Health Services
Solid Waste
Local Enforcement Agency
385 N. Arrowhead Avenue
San Bernardino, CA 92415-0160
Pamella Bennett, Director
(909) 387-4688

SAN DIEGO COUNTY
Department of Health Services
Environmental Health Services
Solid Waste
Local Enforcement Agency
1255 Imperial Avenue
P.O. Box 85261
San Diego, CA 92186-5261

Gary Stephany, Director
(619) 338-2211

SAN FRANCISCO COUNTY
Bureau of Environmental Health Services
Solid Waste
Local Enforcement Agency
101 Grove Street, Room 217
San Francisco, CA 94102

Ben Gale, Director
(415) 554-2770

SAN JOAQUIN COUNTY
County Public Health Service
Environmental Health Division
Solid Waste
Local Enforcement Agency
445 N. San Joaquin Street
P.O. Box 2009
Stockton, CA 95201

Donna Herran, Director
(209) 468-3426

SAN LUIS OBISPO COUNTY
County Health Department
Division of Environmental Health
Solid Waste
Local Enforcement Agency
2156 Sierra Way
P.O. Box 1489
San Luis Obispo, CA 93406

A.F. "Tim" Mazzacano, Director
(805) 781-5544

SAN MATEO COUNTY
Health Services Department
Environmental Health Services Division
Solid Waste
Local Enforcement Agency
590 Hamilton Street, 4th Floor
Redwood City, CA 94063

Brian J. Zamora, Director
(415) 363-4305

SANTA BARBARA COUNTY
Environmental Health Services Department
Solid Waste
Local Enforcement Agency
120 Cremona Drive, Building "C"
Goleta, CA 93117

Gary Erbeck, Director
(805) 681-4939

SANTA CLARA COUNTY
County Health Department
Division of Environmental Health
Solid Waste
Local Enforcement Agency
2220 Moorpark Avenue
San Jose, CA 95128

Lee Esquibel, Director
(408) 299-6060

CITY OF SAN JOSE
Department of Neighborhood Services
Solid Waste
Local Enforcement Agency
801 N. First Street, Room 100
San Jose, CA 95110

Dennis Ferrier, Program Manager
(408) 277-4528

SANTA CRUZ COUNTY
CIWMB Enforcement Agency
Permitting & Enforcement Division
8800 Cal Center Drive
Sacramento, CA 95826

H. Thomas Unsell
(916) 255-2298

SHASTA COUNTY
Department of Environmental Health
Solid Waste
Local Enforcement Agency
1640 West Street
Redding, CA 96001

Russell Mull, Director
(916) 225-5787

SIERRA COUNTY
Lassen Co. is the LEA for Sierra Co.
See Lassen Co. for LEA information

SISKIYOU COUNTY
Public Health Department
Solid Waste
Local Enforcement Agency
806 South Main Street
Yreka, CA 96097

Terry Barber, Supervisor
(916) 842-8230

SOLANO COUNTY
Department of Environmental Management
Solid Waste
Local Enforcement Agency
601 Texas Street
Fairfield, CA 95687

John Taylor, Director
(707) 421-6765

SONOMA COUNTY
Environmental Health Department
Solid Waste
Local Enforcement Agency
1030 Center Drive, Suite "A"
Santa Rosa, CA 95403-2067

Jonathan J. Krug, Director
(707) 525-6522

STANISLAUS COUNTY
CIWMB Enforcement Agency
Permitting & Enforcement Division
8800 Cal Center Drive
Sacramento, CA 95826

H. Thomas Unsell
(916) 255-2298

SUTTER COUNTY
Yuba Co. is the LEA for Sutter Co.
See Yuba Co. for LEA information

TEHAMA COUNTY
Department of Environmental Health
Solid Waste
Local Enforcement Agency
Courthouse, Room 36
633 Washington Street
Red Bluff, CA 96080

Lee Mercer, Director
(916) 527-8020

TRINITY COUNTY
Glenn Co. is the LEA for Trinity Co.
See Glenn Co. for LEA information

TULARE COUNTY
Department of Health Services
Division of Environmental Health
Solid Waste
Local Enforcement Agency
County Civic Center
Visalia, CA 93291

Dave Fishel, Director
(209) 733-6441

TUOLUMNE COUNTY
County Health Department
Environmental Health Division
Solid Waste
Local Enforcement Agency
2 South Green Street
Sonora, CA 95370

Walter L. Kruse, Director
(209) 533-5990

VENTURA COUNTY
County Resource Management Agency
Environmental Health Division
Solid Waste
Local Enforcement Agency
Mail Location 1730
800 S. Victoria Avenue
Ventura, CA 93009

Don Koepp, Director
(805) 654-2818

YOLO COUNTY
County Health Department
Environmental Health
Solid Waste
Local Enforcement Agency
10 Cottonwood Street
Woodland, CA 95695

Thomas Y. To, Chief
(916) 666-8646

YUBA COUNTY
Also LEA for Sutter County
County Environmental Health
Solid Waste
Local Enforcement Agency
938 14th Street
Marysville, CA 95901

Patrick J. Gavigan, Director
(916) 741-6251

CONTRACT COUNTIES:
Local Pubic Health Services Section
Department of Health Services
1800 3rd Street, Room 100
Sacramento, CA 95814

Tibor Banathy, EHS IV
(916) 445-3178

Appendix D Publications List 1993

California Integrated Waste Management Board
8800 Cal Center Drive, Sacramento, CA 95826
Call **1-800-553-2962** to request a publication.

ANNUAL REPORTS

1991 Annual Report, Spring 1992.

1992 Annual Report, Spring 1993.

COMPOSTING

Choosing a Home Composting Bin: for Your Backyard..for Your Community.

Composting, Nature's Way to Recycle, Fall 1992 (brochure).

Turn Your Garden Trimmings into Soil Conditioner.

Worms (brochure).

EDUCATIONAL MATERIALS

Compendium for Integrated Waste Management.

Directory of Existing School District Waste Reduction Programs.

District-Wide Approach to Recycling.

Resource Listing of Agencies/Organizations Providing Assistance to School Districts Implementing Recycling Programs.

Reusable School News.

$eeing Green Through Waste Prevention: a Waste Prevention Guide for School Districts.

A Week With Waste: A Five-Day Activity Packet for Teachers.

GENERAL

California Integrated Waste Management Statutes, January 1993.

A Comprehensive Plan for Management of Nonhazardous Waste in California, June 1985.

Disposal Cost Fee Study, Final Report, February 15, 1991.

1991-92 Legislative Summary, September 1992.

Resource Guide to Integrated Waste Management, 1990.

Strategic Plan of the California Integrated Waste Management Board, January 1993.

Summary of State and Federal Legislation 1993.

Title 14: Natural Resources: Updated January 1992.

HOUSEHOLD HAZARDOUS WASTE

Fact Sheets (in English and Spanish):

- Aerosols, September 1993.
- Antifreeze, September 1993.
- California Oil Recycling Enhancement Act.
- Frequently Asked Questions by Generators of Used Oil.
- Latex Paint, September 1993.
- Lead-Acid Batteries, September 1993.
- Money Available for Collecting Used Oil.
- Oil-Based Paint, September 1993.
- Used Oil, September 1993.

Coloring Book on potential hazardous products for children (grades K-3).

Household Battery Waste Management Study, June 24, 1992.

Paint Teleconference Video.

Recycled Latex Paint Video (15 minutes).

WARNING, The Hazards of Household Wastes.

When You Move...Be Kind, Don't Leave It Behind (brochure).

LOCAL PLANNING

Identification of Regionalization Alternatives.

Literature Survey on Regionalization of Solid Waste Management.

Rural Waste Facility and Transportation Costs.

Survey of Other States Concerning Regionalization of Solid Waste Management.

Weight/Volume Conversion Factor Study for In-Vehicle and In-Place Waste Densities.

MARKETS DEVELOPMENT

Action Plan: Compostables, November 12, 1992

Action Plan: Ferrous Metal, November 18, 1992.

Action Plan: Glass

Action Plan: Pavement, April 28, 1993.

Action Plan: Plastics.

Action Plan: Tires.

Action Plan: Waste Paper.

California Guides to Products with Recycled Content, 1992.

California's Incentives for Production of Virgin and Secondary Materials, May 1993.

Closing the Loop: Market Development Assistance Program. (brochure)

Compendium of Comments Received Regarding Emerging Markets Development Options Series, November 1993.

Emerging Issues: Global Agreements; Analysis of Emerging Market Development Options, August 12, 1993.

Emerging Market Development Options, Summary Report, November 1993.

Manufacturer Responsibility Options to Support Integrated Waste Management, August 1993.

Market Status Report: Compost, August 1992.

Market Status Report: Ferrous Scrap Metal Market, September 1992.

Market Status Report: Glass, May 12, 1993.

Market Status Report: Pavement, April 28, 1993.

Market Status Report: Plastics.

Market Status Report: Tires.

Market Status Report: Waste Paper.

Meeting the Challenge: A Market Development Plan for California, March 1993.

Most Frequently Asked Questions About Market Development.

Quarterly Report on California's Recycling Markets, April-September 1991.

Recommendations to Increase Recycling of Mixed Paper Generated in California: A Report to the Legislature.

Recycling Equipment Tax Credit Report.

Recycling Market Development Zone: Background.

Recycling Market Development Zone: Loan Application, 1994.

Recycling Market Development Zone: Strategy Handbook, 1993-94.

Secondary Materials Market Assessment Study.

Title 14: Recycling Market Development Zone, Designation Process.

Title 14: Recycling Market Development Zone, Low-Interest Revolving Loan Fund.

Tradable Credit Applications to Integrated Waste Management.

NEWS

Infocycling; Information Sharing Memo for Local Government, Issue 1, September 1993; Issue 2, February 1994.

NEWS at a Glance (monthly).

Waste Matters! November/December 1992; January/February 1993, October/November 1993.

NEWSPRINT

1994 Recycled Content Newsprint Quality Standards.

PLASTICS

Conceptual Plan to Implement the Rigid Plastic Packaging Container Act.

1993 California Directory of Plastic Reprocessors and Brokers.

Plastics: Waste Management Alternatives, Adopted May 28, 1992.

SB 235: Recycling Rate Report, May 14, 1993.

RECYCLING

Christmas Tree Recycling Guidebook, November 1992.

Evaluation of the State of California's Recycling Program Fiscal Year 1992/93.

Paper Recycling Handbook for Office Recycling Coordinators, September 1991.

Project Recycle (brochure).

Project Recycle Update (quarterly).

Recycled Products Procurement, January 23, 1993.

Recycling (US EPA brochure).

Recycling in Business (brochure).

Recycling, No Time to Waste, Fall 1992 (brochure).

State Recycled Procurement Report; provides recommendations for the State's procurement program for recycled goods and materials, January 1993.

SOLID WASTE FACILITIES

Joint Report: Reforming the California Solid Waste Disposal Regulatory Process, April 1993.

LEA Advisory No. 1, October 6, 1992: Asbestos Containing Waste Disposal.

LEA Advisory No. 2, February 17, 1993: 92' Legislation Impacts Existing Waste Programs.

LEA Advisory No. 3, June 10, 1993: Site Investigation Process for Investigating Closed, Illegal, and Abandoned Disposal Sites.

LEA Advisory No. 4, September 23, 1993: Permitting of Fuel Contaminated Soils Treatment/Processing Facilities.

LEA Advisory No. 5, December 15, 1993: Use of nonhazardous Contaminated Soil as Daily Cover.

LEA Advisory No. 6, December 16, 1993: Aspergillus, Aspergillosis, and Composting Operations in California.

LEA Advisory No. 7, December 30, 1993: Subtitle D Questions and Answers.

LEA Advisory No. 8, January 31, 1994: Interim Guidance for Enforcement of State Minimum Standards at Disposal Sites.

LEA Advisory No. 9, February 10, 1994: Solid Waste Ranking System User Guide, Site Investigation Process (SIP) Part II.

LEA Evaluation Procedure.

MRFs: Policy, Planning and Design Resource Manual, November 1991.

Permit Desk Manual, June 1992

Reaching the Limit: An Interim Report of Landfill Capacity in April 1992.

Regulatory Fee and Program Overlap Report, November 1993.

Solid Waste Management Permit and Regulatory Reform (ongoing).

Title 14: Regulations for Local Agency Designation and Certification as the Local Enforcement Agency (LEA), December 17, 1991.

SPECIAL WASTES

Report to the Governor and Legislature on Metallic Discards Management.

TIRES

Meeting California's Waste Tire Challenge.

Tires as a Fuel Supplement: A Feasibility Study, January 1992.

USED OIL

California Oil Recycling Enhancement Act.

Frequently Asked Questions by Generators of Used Oil.

Money Available for Collecting Used Oil.

Used Oil, September 1993.

Used Oil Collection Demonstration Grant Program Final Report.

Used Oil Recycling In California, A Status Report for the 1988 Calendar Year, January 1990.

WASTE DIVERSION

Business Reuse and Recycling Catalog, CALMAX (bimonthly).

Encouraging Commercial Sector Participation in Waste Diversion Programs, An Interactive Half-Day Videoconference, Resource Manual, February 1992.

Waste Diversion in Rural California, September 1991.

WASTE PREVENTION

Beyond the Decision: Unit Pricing System Design and Implementation.

Don't Throw Your Profits Out with Your Trash.

Food for Thought, Restaurant Guide to Waste Reduction and Recycling.

A Guide to Leaving Less Behind for the Future: Reduce, Reuse, Recycle.

Pay As You Throw (fact sheet).

PRECYCLIN', Rx for Living, Reduce, Reuse, Recycle.

Resource guide to Unit Pricing for Solid Waste: Case Studies and References.

Sending Your Grass Back to Its Roots: Grasscycling. (brochure)

Source Reduction, Stopping Waste at the Start, Fall 1992. (brochure)

Statewide Waste Prevention Plan.

Unit Pricing for Solid Waste: an Introduction for Decision Makers.

Waste Reduction for Business and Industry. (brochure)

WOOD WASTE

Wood Waste Diversion Guide.

Appendix E

Tire Recycling Program Annual Report

This update has been prepared to partially fulfill the reporting requirements of Assembly Bill 1843 of 1989 (§42884 of the Public Resources Code). The California Integrated Waste Management Board (CIWMB or Board) is required to report to the Legislature on the number of tires recycled or otherwise diverted from disposal in landfills or stockpiles and the comparative costs and benefits of the recycling or conversion processes funded from the California Tire Recycling Management Fund.

USED TIRE QUANTIFICATION

Due to the increase in population, the number of used tires generated annually also increases. In California alone, an estimated 28.5 million used tires (light-duty and heavy-duty) were generated in 1993. Because limited data specific to California exist, quantifying used tire generation rates (as well as recycling rates) is difficult. Therefore, this estimate is based primarily on national figures for new and retreaded replacement tires and population increases.

Board staff has estimated that of the 28.5 million used tires generated in 1993, approximately 13.6 million were diverted for varying alternatives including reuse, retreading, and combustion (see Table 1). Many other alternatives which have historically consumed small amounts of tires also exist, primarily Asphalt-Rubber.

Because of the lack of detailed information available on tire recycling activities in California (due to the lack of a formal system for tracking used tire shipments and for creating and maintaining a database of used tire haulers, shredders, processors and recyclers), Board staff has estimated the quantity of tires recycled or diverted from landfill disposal and stockpiling based primarily on industry contacts who transport, process, and/or recycle large quantities of used tires. Any recycling trends discussed have been based on information from industry contacts as well as staff estimates, and are preliminary at this time.

Reuse

An alternative to disposal is tire reuse. After the purchase of new tires, the remaining used tires which still have a legal tread depth can be re-sold by the tire dealer. Rather than being disposed of prematurely, these tires are commonly reused, often beyond that which the law allows. Based upon industry sources and trends, of the estimated 28.5 million used tires generated this year, about 1.3 million were reused.

Retreading

Tire retreading is a viable option for renewing used tires by reusing the tire casing after the legal tread has been worn off. Based upon a Board survey completed in 1991 and national tire retreading trends and statistics for 1992, staff estimates that about 2.1 million retreaded tires were sold in 1993.

Export

Tire export (consisting of both *used* and *waste* tires) reduces the number of tires requiring disposal in California. According to industry contacts, approximately 1.3 million *used* tires were exported (mainly to Mexico) for reuse and retreading in 1993. Historically *waste* tires have been exported to Mexico and have reportedly been stockpiled there rather than reused. Due to recent environmental protection efforts by the Mexican government however, *waste* tires cannot be legally imported until all *waste* tires in Mexico are first reused or cleaned up. It may be at least several years before *waste* tires can again be exported legally to Mexico.

Combustion

Tire combustion also reduces the number of tires requiring landfill disposal or stockpiling. In 1993, about 8.2 million tires were combusted as fuel in California (of which 7.4 million were from the annual California waste stream). Of the 8.2 million tires combusted, approximately 5.2 million (of which 0.5 million were from the existing stockpile) were combusted at the Modesto Energy Project in

Used Tire Recycling and Disposal

Numbers in Millions

Year	California Population	Estimated # of Tires Generated	Reused	Retreaded		Exported	Imported[1]	Combusted for Energy Production[2]	Combusted as Fuel Supplement[3]	Other Uses[4]	Total# Tires Diverted[5]	Remaining # Tires Disposed of	%Tires Diverted
				Light	Heavy								
1990	29.5	27	1	0.9	1.4	1.3	0	2.4	1.6	.6	9.2	17.8	34%
1991	30.1	27.5	1	0.8	1.4	1.3	0.4	4.1	1.7	.8	10.7	16.8	39%
1992	30.7	28.2	1.1	0.7	1.4	1.3	0.63	4.7	2.1	1.1	12.0	16.2	42%
1993	31.1	28.5	1.3	0.7	1.4	1.3	0.3	4.9	3.2	1.5	14	14.5	49%

1. Imported tires combusted as a fuel supplement.
2. Because additional tires from an existing tire pile are used, the *total* number combusted is higher (about 5.2 million for 1992 & 1993). The figure represents the number of tires combusted from the annual waste tire stream.
3. To determine the number of *California* tires combusted as a fuel supplement, subtract the number of tires imported.
4. In actuality, more *tire rubber* is used than these figures depict. However, the extra rubber used is tire buffings from tire retread operations. These tires are already accounted for in the retreaded tire category.
5. Determined by summing the number Reused, Retreaded, Exported, and Combusted, and subtracting the number Imported.

Table 1

Westley, California. The facility generates about 14 megawatts of electrical power which is sold to a local utility. Because of boiler size limitations at the Modesto Energy Project, little increase in waste tire combustion at this facility is anticipated.

Calaveras Cement Company in Redding, California, combusted (as a partial substitute for coal) approximately 2.0 million whole tires in 1993, of which 0.3 million were imported from Oregon. Of the total fuel consumption, 25% is supplied by waste tires. Due to process limitations, it is not anticipated that this facility will increase its tire use.

Southwestern Cement Company in Victorville, California, combusted about 1.0 million whole tires in 1993. Company officials hope to combust waste tires in a second existing kiln at the facility. The kiln is, however, a "long" kiln and would require significant modification to combust whole tires. If permitted, the Southwestern Cement Company in Victorville could combust up to about 2.3 million tires per year.

Mitsubishi Cement Company in Lucerne Valley, California, began combusting whole tires in June 1993, totaling about 200,000 for the year. If permitted, the facility could combust 4.0 million tires per year.

In 1992, company officials with RMC Lonestar in Davenport, California, abandoned their attempt to obtain a permit modification to allow combustion of waste tires. The company had been pursuing the use of tires as a fuel supplement since 1990.

Other Uses

Staff estimates that about 1.5 million tires were used for other alternatives, primarily Asphalt-Rubber, Rubber-Modified Asphalt Concrete, playground cover, crash barriers, and various stamped or molded products.

Due to the passage of the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), the use of Asphalt-Rubber could increase up to 20 million tires per year by 1997. In October 1993, however, Congress passed a one year moratorium on the funding for the Asphalt Rubber portions of ISTEA. The final outcome of this issue is not known at this time. Caltrans is continuing to use Asphalt Rubber in California paving applications regardless of the outcome.

Quantification Summary

The remaining number of tires requiring landfill disposal or stockpiling in 1993 was about 14.9 million tires or about 52% of the used tire waste stream. Approximately 13.6 million used tires

(48%) were diverted from disposal (up from 34% in 1990). Because of the uncertainty of some recycling or diversion estimates, however, these numbers are only approximations.

Board staff is confident in the values assigned for the categories of tires retreaded, imported, combusted for energy production, and combusted as a fuel supplement (see Table 1). Staff has less confidence, however, in the values assigned to the categories of reused, exported, and other uses due to the lack of sufficient information.

TIRE GRANT PROGRAM

FY 1992-93

Staff of the tire recycling program initiated the Board's tire grant program by offering a total of $1,973,000 from the California Tire Recycling Management Fund in FY 1992-93 through two programs: the Local Government Innovation Program ($473,000) and the Tire Recycling Grant Program ($1,500,000).

Local Government Innovation Program

The Board awarded $447,115 (for a total program amount of $887,302 with matching funds) to 17 local governments through the Local Government Innovation Program. The grants will be used for activities including development of new uses for waste tires, for collection demonstration programs, for public education on illegal dumping, and for tire pile cleanups.Listed below are the approved projects.

Tire Recycling Grant Program

The Board received 99 applications from private businesses and local governments for funding through the Tire Recycling Grant Program. Of the 99, 28 were awarded a total of $1,497,275. The grants will be used for business development and innovative research for tire recycling. The list on the following page identifies the projects approved.

Local Government Innovation Program

GRANTEE	PROJECT	AMOUNT
City of South Lake Tahoe	"Earthship" tire building	$40,000
City of Huntington Beach	Asphalt Rubber paving job	$40,000
Shasta County	Illegal tire pile cleanup & public education	$22,500
Sonoma County	Cleanup day & public education	$12,000
City of San Diego	Market research & recruitment efforts	$4,945
Humboldt County	Business plan & business recruitment	$24,270
Kern County	Processing oversized tires	$30,000
Kern County	Program to prevent illegal dumping	$30,000
San Diego County	Rural tire collection network	$17,600
City of Los Angeles	Asphalt Rubber paving job	$34,950
City of of Angeles	Residential collection operation	$30,000
Alameda County	Illegal tire pile video and booklet	$30,000
Sacramento Regional County Solid Waste Authority	Business recruitment plan	$40,000
Lake County	Diversion program & public education	$14,700
City of Oakland	Business plan development for recruitment	$40,000
City of Milpitas	Dropoff event & public education	$9,900
Yolo County	Research on tires as an alternative daily cover	$26,250

Tire Recycling Grant Program

GRANTEE	PROJECT	AMOUNT
AET Systems	Sub-surface effluent dispersion system	$50,000
Action Engineering	Tire/concrete railroad tie	$30,000
BAS Recycling	Playgroung safety mat	$100,000
Burke Industries	Residential roofing "shake"	$94,025
CA Recycling Co.	Highway noise barrier	$50,000
Dave's Tire & Wheel	Backfill demonstration project	$30,000
Enviro-Med	Playgroung safety surface	$20,000
Geremia/Pasztor/Sadler	Self-compacting, flowable concrete	$20,000
Hap Fisher Assoc.	Plastic/rubber utility poles	$50,000
Jin Cheng Corp.	Rubber reclaiming	$30,000
Lydia M. Frezel	Ultra high pressure water jetting	$49,445
Manhole Adjusting, Inc.	Crumb rubber plant	$50,000
Marine Forests Society	Tire Mussel reef	$100,000
Mortimer Tree Service	Tree root barriers	$36,000
PACE	Playground surfacing	$30,000
PRK International	Carbon black market development	$30,000
Reco-Tech International, Inc.	Ozone treatment	$60,000
SRI International	Electromagnetic radiation absorbers	$68,847
The Tireless Effort	Traffic delineators	$60,000

Results from the first grant cycle will be obtained between July 1994 and July 1995, depending on the individual completion dates. Preliminary cost and benefit comparisons regarding waste tire recycling or conversion processes funded by this program will be determined for the next annual report. Because approximately 31 of the 36 grant recipients will be using the money for technical research, public education, public collection programs, or tire pile cleanups, however, cost and benefit comparisons will not be applicable to these projects. Many projects, however, may have long term payoffs (not readily computable) resulting from completed research, removal of technical barriers, opening of new markets, creation of new recycling businesses, and increased public awareness toward the environment.

CONTRACTS

Besides awarding grants, funds from the California Tire Recycling Management Fund have been used to fund research-related contracts aimed at promoting alternatives to landfill disposal of whole waste tires. In FY 1991-92, approximately $700,000 was awarded for one contract and two Interagency Agreements (IAA) with other state agencies. Approximately $800,000 was awarded in FY 1992-93 for two contracts and two IAAs. Finally, in FY 1993-94, $400,000 was allocated for one contract.

FY 1991-92

The Board awarded a total of $36,000 to the Local Government Commission to plan and conduct a conference aimed at promoting alternatives to

landfill disposal of whole waste tires. The Conference was held on April 1 & 2, 1993, in Los Angeles, California, and was attended by approximately 200 people.

Conference results include increased public awareness, communication of barriers to tire use, and input from the public and industry representatives. A second conference is tentatively planned for 1995.

An IAA, for the amount of $500,000, was awarded to Caltrans, Division of New Technology, Materials, and Research, for creating a database of paving jobs containing tire rubber, for performing air emissions testing during the recycling of pavement containing tire rubber, and for developing specifications for the use of tire rubber in asphalt concrete. The database is being created and the air emissions testing is scheduled for Spring 1994. It is anticipated that specifications for construction of asphalt concrete projects containing tire rubber will be developed by mid-1995.

This contract is important because it will assist in the development of specifications for the use of rubber in asphalt concrete. Once developed and distributed, the specifications will facilitate the increased use of rubber in asphalt concrete at the local level.

The California Air Resources Board was awarded an IAA for $160,000 to provide air emissions testing of tire derived fuel combusted at a cement manufacturing facility and a biomass combustion facility. These results would benefit other facilities in the state interested in combusting waste tires by further demonstrating its use to the local Air Pollution Control Districts and Air Quality Management Districts. Results are anticipated by 1995.

FY 1992-93

An IAA for $500,000 was awarded to Caltrans to install 15 test maintenance strategies of various "recipes" of asphalt rubber pavements, provide ongoing monitoring and testing, and provide biennial reports to the Board for up to 15 years. The test strategies have been placed and the final project report (to include information on methodology, application specifications, processes, materials and equipment used, work performed, problems and solutions, cost comparisons, and testing schedules) will be available by early 1995. Beginning mid-1997, biennial progress reports including information on current status, test results and evaluations, strategy performance and failures, and life-cycle analyses will also be available.

A contract was awarded to CalRecovery, Inc., for $69,000 to research existing pyrolysis projects in the nation. A final report will be available by mid-1994.

The California Office of State Fire Marshal has been awarded an IAA for $250,000 to provide training and consultation to local fire authorities, identify waste tire facilities not presently registered with the Board, and oversee laboratory and field research conducted by the University of California at Berkeley. A final report of the findings will be available late 1994.

R. W. Beck & Associates have been awarded a contract for $40,000 to research the characteristics and possible uses of tire combustion ash. The final report will be available early 1994.

FY 1993-94

In an attempt to curb illegal tire disposal, the Legislature has passed a law requiring the Board to implement a waste tire hauler registration program. The program will require tire haulers to register with the Board and to document pick-ups and deliveries using a manifest system. The board has allocated $400,000 to be used for creating this program.

Appendix F

Legislative Bill Index

Bill No., Author, Chapter No., Year	Subject	Page Number
AB 4 (Eastin) Ch. 1094, 1989	Project Recycle (as amended by SB 1761 (Vuich), Ch. 586, 1990 and SB 960 (Hart), Ch. 1012, 1991)	42
	State & Local Procurement of Recycled-Content Products (and SB 1322 (Bergeson), Ch. 1096, 1989) (and as amended by SB 1761 (Vuich), Ch. 586, 1990 and SB 960 (Hart), Ch. 1012, 1991, and AB 11 (Eastin), Ch. 960, 1993)	25
AB 11 (Eastin) Ch. 960, 1993	State & Local Procurement of Recycled-Content Products	25
AB 240 (Peace) Ch. 805, 1991	Solid Waste Facilities on Indian Country (as amended by AB 3355 (Committee on Judiciary Maintenance of the Codes), Ch. 427, 1992)	80
AB 440 (Sher) Ch. 1169, 1993	Closure/Postclosure Plans	82
	Financial Ability	82
	Countywide Integrated Waste Management Plans	37, 71
	Integrated Waste Management Regulations	71
	Waste Generation	41, 72
AB 888 (LaFollette) Ch. 809, 1989	Household Hazardous Waste	61
	Public Information	57
	Technical Assistance	62
AB 939 (Sher) Ch. 1095, 1989	Board as the Enforcement Agency (as amended by AB 3992 (Sher), Ch. 1355, 1990 and AB 1515 (Sher), Ch. 717, 1991 and AB 1220 (Eastin), Ch. 656, 1993)	77
	Board Responsibilities	1
	Closed, Illegal, and Abandoned Sites (as amended by AB 2211 (Sher), Ch. 280, 1992 and AB 1220 (Eastin), Ch. 656, 1993)	83
	Closure/Postclosure Plans (as amended by AB 1515 (Sher), Ch. 717, 1991 and AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992)	82
	Financial Ability (as amended by SB 610 (Calderon), Ch. 1062, 1992 and AB 1827 (Sher), Ch. 289, 1993 and AB 1220 (Eastin), Ch. 656, 1993 and AB 440 (Sher), Ch. 1169, 1993)	82

Bill No., Author, Chapter No., Year	Subject	Page Number
	Countywide Integrated Waste Management Plans (as amended by AB 2092 (Sher), Ch. 105, 1992 and AB 3001 (Cortese), Ch. 1291, 1992 and AB 2494 (Sher), Ch. 1292, 1992 and AB 440 (Sher), Ch. 1169, 1993)	37, 71
	Countywide Siting Element (as amended by AB 3992 (Sher), Ch. 1355, 1990)	37
	Household Hazardous Waste	61
	Public Education (repealed and added by SB 937 (Vuich), Ch. 35, 1990 and amended by SB 1143 (Killea), Ch. 1346, 1992)	57
	Household Hazardous Waste Element	37
	Integrated Waste Management Regulations (as amended by AB 440 (Sher) Ch. 1169, 1993)	71
	Local Enforcement Agencies (as amended by AB 2494 (Sher), Ch. 1292, 1992) (and AB 1220 (Eastin), Ch. 656, 1993)	73
	Market Development	23
	Operating Liability (as amended by AB 1220 (Eastin), Ch. 656, 1993)	83
	Organization of the Board	2
	Solid Waste Facilities	77
	Inspections (as amended by AB 2211 (Sher), Ch. 280, 1992 and AB 1220 (Eastin), Ch. 656, 1993)	82
	Management	77
	Permit (as amended by AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992 and AB 1220 (Eastin), Ch. 656, 1993)	77
	Regulations (as amended by AB 1220 (Eastin), Ch. 656, 1993)	70
	Source Reduction and Recycling Element (as amended by AB 1820 (Sher), Ch. 145, 1990 and AB 2092, (Sher), Ch. 105, 1992 and AB 2494 (Sher), Ch. 1292, 1992)	37
	Waste Diversion Requirements (as amended by AB 1820 (Sher), Ch. 145, 1990)	37
	Waste Prevention (Source Reduction)	13

Bill No., Author, Chapter No., Year	Subject	Page Number
AB 1100 (Lee) Ch. 586, 1991	Used-Oil Collection Demonstration Grants	67
AB 1220 (Eastin) Ch. 656, 1993	Board as the Enforcement Agency	77
	Closed, Illegal, and Abandoned Sites	83
	Closure/Postclosure Plans	82
	Financial Ability (as amended by AB 440 (Sher), Ch. 1169, 1993)	82
	Household Hazardous Waste Grants	63
	Landfill Gas	85
	Local Enforcement Agencies	73
	Technical Assistance	82
	Training	82
	Operating Liability	83
	Financial Assurance	83
	Solid Waste Facilities	77
	Inspections	82
	Permitting	77
	Regulations	70
	Solid Waste Assessment Test	83
	The Solid Waste Disposal Regulatory Reform Act of 1993	70
	Implementation Plan	70
AB 1305 (Killea) Ch. 1093, 1989	Newsprint	29
	Recycled-Content Paper Survey	32
AB 1308 (Killea) Ch. 1091, 1989	Recycling Equipment Tax Credit Program (and SB 432 (Alquist), Ch. 1090, 1989 and as amended by SB 1684 (Greene, L.), Ch. 1295, 1992)	35
AB 1327 (Farr) Ch. 842, 1991	Model Recycling Space Allocation Ordinance (as amended by SB 452 (Committee on Budget and Fiscal Review), Ch. 60, 1993)	62
AB 1381 (Areias) Ch. 843, 1991	Schoolsite Source Reduction & Recycling	17, 45
AB 1515 (Sher) Ch. 717, 1991	Board as the Enforcement Agency (as amended by AB 1220 (Eastin), Ch. 656, 1993)	77

Bill No., Author, Chapter No., Year	Subject	Page Number
	Closure/Postclosure Plans (as amended by AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992)	82
	Market Development	23
	Non-Yard Wood Waste	45
	Plastics Recycling Information Clearinghouse	59
	Public Information and Education (as amended by AB 2494 (Sher), Ch. 1292, 1992)	15, 26, 41, 51
	CALMAX (California Materials Exchange)	16, 42
	Integrated Waste Management Curriculum Development	54
	Measuring Effectiveness	13
	Review of Efforts	52
	Waste Reduction Awards Program	20, 63
	Waste Prevention	13
	Waste Tires (as amended by AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992)	81
AB 1520 (Sher) Ch. 718, 1991	Sludge Diversion (as amended by AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992)	50
AB 1570 (Sher) Ch. 1226, 1989	Hotline (as amended by AB 2076, (Sher), Ch. 817, 1991)	55
AB 1760 (Eastin) Ch. 849, 1991	Alternative Landfill Cover (as amended by AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992)	86
	Metals Recovery Residue	88
	Metallic Discards	49
AB 1809 (Tanner) Ch. 574, 1986	Household Hazardous Waste (as amended by AB 888 (LaFollette), Ch. 809, 1989)	61
	Public Information	57
	Technical Assistance	62
AB 1820 (Sher) Ch. 145, 1990	Source Reduction and Recycling Element (as amended by AB 2092 (Sher), Ch. 105, 1992)	37
	Waste Diversion Requirements	37

Bill No., Author, Chapter No., Year	Subject	Page Number
AB 1827 (Sher) Ch. 289, 1993	Closure/Postclosure Plans	82
	Financial Ability (as amended by AB 440 (Sher), Ch. 1169, 1993 and AB 1220 (Eastin), Ch. 656, 1993)	82
AB 1843 (W. Brown) Ch. 974, 1989	Waste Tires (and added by SB 937 (Vuich), Ch. 35, 1990 and amended by AB 1515 (Sher), Ch. 717, 1991 and AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992)	65, 81
	Facility Permits	81
	Grants	65
	Rubberized Asphalt Concrete	36
	Tire Recycling	65
AB 2076 (Sher) Ch. 817, 1991	Hotline	55
	Used Oil Recycling Program (as amended by AB 3073 (Sher), Ch. 1101, 1992)	46
	Public Education	56
AB 2092 (Sher) Ch. 105, 1992	Countywide Integrated Waste Management Plans (as amended by AB 2494 (Sher), Ch. 1292, 1992)	37
	Household Hazardous Waste Element (as amended by AB 2494 (Sher), Ch. 1292, 1992)	37
	Source Reduction and Recycling Element (as amended by AB 2494 (Sher), Ch. 1292, 1992)	37
AB 2136 (Eastin) Ch. 655, 1993	Solid Waste Disposal and Codisposal Site Cleanup Program	84
AB 2211 (Sher) Ch. 280, 1992	Closed, Illegal, and Abandoned Sites (as amended by AB 1220 (Eastin), Ch. 656, 1993)	83
AB 2448 (Eastin) Ch. 1319, 1987	Closure/Postclosure Plans (as amended by AB 939 (Sher), Ch. 1095, 1989, and AB 1515 (Sher), Ch. 717, 1991)	82
	Household Hazardous Waste (as amended by AB 939 (Sher), Ch. 1095, 1989)	61
	Grants (as amended by AB 939 (Sher), 1095, 1989 and AB 3348 (Eastin, Ch. 1218, 1992)	63

Bill No., Author, Chapter No., Year	Subject	Page Number
AB 2494 (Sher) Ch. 1292, 1992	Alternative Landfill Cover	86
	Metals Recovery Residue	88
	Closure/Postclosure Plans	82
	Countywide Integrated Waste Mangement Plans (and AB 2092 (Sher), Ch. 105, 1992, AB 3001 (Cortese), Ch. 1291, 1992 and AB 440 (Sher), Ch. 1169, 1993)	37, 71
	Household Hazardous Waste Element	37
	Lead-Acid Batteries	26
	Local Enforcement Agencies	73
	Markets for Diverted Materials	23
	Markets for Recyclable Plastics	24
	Office of Local Assistance	40, 59
	Planning Models	40
	Public Information and Education	15, 26, 41, 51
	Integrated Waste Management Curriculum Development	
	Research and Development Program	36, 50
	Retreaded Tire Program	26
	Rural Model Programs	40
	Sludge Diversion	50
	Solid Waste Facilities Permit	77
	Source Reduction and Recycling Element	37
	Waste Generation	41, 72
	Waste Prevention Programs	13
	Waste Tires	
AB 2661 (Chandler) Ch. 1207, 1992	Compost	28, 87
	Rice Straw	88
AB 2707 (LaFollette) Ch. 1406, 1990	Household Hazardous Waste Element (as amended by AB 2092 (Sher), Ch. 105, 1992)	37
AB 3001 (Cortese) Ch. 1291, 1992	Countywide Integrated Waste Management Plans (and AB 2494 (Sher), Ch. 1292, 1992 and AB 440 (Sher), Ch. 1169, 1993)	37, 71

Bill No., Author, Chapter No., Year	Subject	Page Number
	Nondisposal Facility Elements	37, 71
AB 3073 (Sher) Ch. 1101, 1992	Used Oil Recycling Program	46
AB 3322 (Sher) Ch. 1293, 1992	Alternative Landfill Cover	86
	Metals Recovery Residue	88
	Closure/Postclosure Plans	82
	Integrated Waste Management Curriculum Development	54
	Lead-Acid Batteries	26
	Markets for Recyclable Plastics	24
	Public Information and Education	15, 26, 41
	Research and Development Program	36, 50
	Retreaded Tire Program	26
	Sludge Diversion	50
	Solid Waste Facilities Permit	77
	Waste Tires	65
AB 3348 (Eastin) Ch. 1218, 1992	Household Hazardous Waste Grants	63
AB 3355 (Committee on Judiciary Maintenance of the Codes) Ch. 427, 1992	Solid Waste Facilities on Indian Country	80
AB 3527 (Calderon) Ch. 1408, 1984	Operating Liability (as amended by AB 939 (Sher), Ch. 1095, 1989 and AB 1220 (Eastin), Ch. 656, 1993))	83
AB 3992 (Sher) Ch. 1355, 1990	Board as the Enforcement Agency (as amended by AB 1515 (Sher), Ch. 717, 1991 and AB 1220 (Eastin), Ch. 656, 1993)	77
	Countywide Siting Element	37
	Local Enforcement Agency Certification (as amended by AB 2494 (Sher), Ch. 1292, 1992)	73
AB 4032 (Harvey) Ch. 668, 1990	Landfill Gas (as amended by AB 1220 (Eastin), Ch. 656, 1993)	85
SB 235 (Hart) Ch. 769, 1991	Rigid Plastic Packaging Containers (as amended by SB 466 (Boatwright), Ch. 1062, 1993 and SB 951 (Hart), Ch. 1076, 1993)	19, 30

Bill No., Author, Chapter No., Year	Subject	Page Number
SB 426 (Morgan) Ch. 472, 1991	Recycling Equipment Tax Credit Program (as amended by SB 1684 (Greene, L.), Ch. 1295, 1992)	35
SB 432 (Alquist) Ch. 1090, 1989	Recycling Equipment Tax Credit Program (and AB 1308 (Killea), Ch. 1091, 1989 and as amended by SB 2894 (Alquist), Ch. 1055, 1990 and SB 426 (Morgan), Ch. 472, 1991 and SB 1684 (Greene, L.), Ch. 1295, 1992)	35
SB 452 (Committee on Budget and Fiscal Review) Ch. 60, 1993	Model Recycling Space Allocation Ordinance	62
SB 466 (Boatwright) Ch. 1061, 1993	Rigid Plastic Packaging Containers (as amended by SB 951 (Hart), Ch. 1076, 1993)	19, 30
SB 487 (Bergeson) Ch. 1106, 1991	Local Government Technical Advisory Committee	59
SB 610 (Calderon) Ch. 1062, 1992	Closure/Postclosure Plans	82
	Financial Ability (as amended by AB 1827 (Sher), Ch. 289, 1993 and AB 440 (Sher), Ch. 1169, 1993)	82
SB 937 (Vuich) Ch. 35, 1990	Household Hazardous Waste	61
	Public Education (as amended by SB 1143 (Killea), Ch. 1346, 1992)	57
	Technical Assistance	62
	Newsprint	29
	Recycled-Content Paper Survey	32
	Rubberized Asphalt Concrete	36
	Waste Tires (and repealed and added by AB 1515 (Sher), Ch. 717, 1991 and AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992)	65, 81
	Facility Permits	81
	Tire Recycling	65
SB 951 (Hart) Ch. 1076, 1993	Rigid Plastic Packaging Containers	19, 30
SB 960 (Hart) Ch. 1012, 1991	Mixed Paper Waste Study (as amended by SB 1919 (Hart), Ch. 688, 1992)	32
	Project Recycle	42

Bill No., Author, Chapter No., Year	Subject	Page Number
	State Waste Paper Collection	42
	State & Local Procurement of Recycled-Content Products as amended by AB 11 (Eastin), Ch. 960, 1993)	25
SB 1143 (Killea) Ch. 1346, 1992	Household Hazardous Waste	63
SB 1200 (Petris) Ch. 1657, 1990	Used Oil Collection Demonstration Grants (as amended by AB 1100 (Lee), Ch. 586, 1991)	67
SB 1322 (Bergeson) Ch. 1096, 1989	Alternative Landfill Cover (as amended by SB 2195 (Bergeson), Ch. 1156, 1990 and AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992))	86
	Compost (as amended by SB 2195 (Bergeson), Ch. 1156, 1990 and AB 2661 (Chandler), Ch. 1207, 1992)	28, 87
	Lead-Acid Batteries (as amended by AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992)	26
	Local Enforcement Agencies (as amended by SB 2061 (Leslie), Ch. 1035, 1992)	73
	Training and Assistance	82
	Markets for Recyclable Plastics (as amended by SB 2195 (Bergeson), Ch. 1156, 1990 and AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992)	24
	Office Paper Recovery Program	42
	Plastics Recycling Information Clearinghouse as amended by AB 1515 (Sher), Ch. 717, 1991)	59
	Public Information and Education (repealed and added by AB 1515 (Sher), Ch. 717, 1991 and amended by AB 2494 (Sher), Ch. 1292, 1992)	15, 26, 41, 51
	CALMAX (California Materials Exchange)	16, 42
	Integrated Waste Management Curriculum Development (repealed and added by AB 1515 (Sher), Ch. 717, 1991 and amended by AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992)	54
	Measuring Effectiveness	13
	Review of Efforts	52
	Waste Reduction Awards Program	20, 63
	Recycling Market Development Zones	33

Bill No., Author, Chapter No., Year	Subject	Page Number
	Research & Development Program (as amended by AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992)	36, 50
	Anaerobic Digestion	50
	Santa Barbara County Composting Project	36
	Retreaded Tire Program (as amended by SB 2195 (Bergeson), Ch. 1156, 1990 and AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992)	26
	State & Local Procurement of Recycled-Content Products (and AB 4 (Eastin), Ch. 1094, 1989)	25
	Technical Assistance	40
	Landfill Capacity Study	60
	Yard Waste Source Reduction	19
SB 1684 (Greene, L.) 1295, 1992	Recycling Equipment Tax Credit Program	35
SB 1761 (Vuich) Ch. 586, 1990	State & Local Procurement of Recycled-Content Products (as amended by SB 960 (Hart), Ch. 1076, 1993 and AB 11 (Eastin), Ch. 960, 1993)	25
	Project Recycle (as amended by SB 960 (Hart), Ch. 1012, 1991)	42
SB 1919 (Hart) Ch. 688, 1992	Trash Bag Minimum Content	30
	Mixed Waste Paper Study	32
SB 2061 (Leslie) Ch. 1035, 1992	Local Enforcement Agencies	73
	Training and Assistance	82
SB 2092 (Hart) Ch. 1452, 1990	Trash Bags (as amended by SB 1919 (Hart), Ch. 688, 1992)	30
SB 2195 (Bergeson) Ch. 1156, 1990	Alternative Landfill Cover	86
	Compost	28, 87

Bill No., Author, Chapter No., Year	Subject	Page Number
	Markets for Recyclable Plastics (as amended by AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992)	24
	Retreaded Tires (as amended by AB 2494 (Sher), Ch. 1292, 1992 and AB 3322 (Sher), Ch. 1293, 1992)	26
SB 2894 (Alquist) Ch. 1055, 1990	Recycling Equipment Tax Credit Program (as amended by SB 426 (Morgan), Ch. 472, 1991 and SB 1684 (Greene, L.), Ch. 1295, 1992)	35

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

8800 Cal Center Drive
Sacramento, CA 95826
(916) 255-2200

OFFICE OF THE EXECUTIVE DIRECTOR

Ralph Chandler 255-2182
Executive Director
Dorothy Rice 255-2185
Acting Chief Deputy Director

Legal Office

Kathryn Tobias 255-2188
Supervising Staff Counsel

Planning & Analysis Office

Caren Trgovcich 255-2195
Assistant Director

Administration & Finance Division

Marie LaVergne 255-2259
Deputy Director

Governmental & Regulatory Affairs Division

Vacant 255-2206
Deputy Director

Markets, Research & Technology Division

Daniel Gorfain 255-2319
Deputy Director

Permitting & Enforcement Division

Doug Okumura 255-2431
Deputy Director

Waste Prevention & Education Division

Pat Macht 255-4453
Deputy Director

ACKNOWLEDGEMENTS

1993 Annual Report

Report Writing Director: Caren Trgovcich

Principal Writers: Mercy Caputi, Bobbie Garcia

Senior Graphic Artist: Diane O'Leary

Graphic Artist: Thomas Gonzales

Special acknowledgement to all Board staff who assisted with the preparation of this report.

For additional copies of this report, contact the Board's Recycling Hotline at (800) 553-2962.

California Integrated Waste Management Board
8800 Cal Center Drive
Sacramento, California 95826