

CalRecycle
2011 Annual Report



California Department of Resources Recycling and Recovery

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CalRecycle 2011 Annual Report

Effective waste management programs and economic conditions help contribute to the fact that Californians throw away less trash today than ever before. Today, California is keeping about 65 percent of its waste out of landfills. The current per capita disposal rate of 4.5 pounds of trash per person per day is the lowest on record since California began tracking statewide waste disposal in 1995. The California Department of Resources Recycling and Recovery (CalRecycle) calculates California's disposal rate on a yearly basis as a tool to help local communities meet waste reduction and recycling goals. The per capita rate reflects all household and commercial waste that makes its way to California landfills. Total disposal in 2010 was 30.4 million tons, a drop of 700,000 tons from 2009. Declines in personal income and consumption suggest that the recession is the primary driver of recent reductions in disposal volumes.

Californians recycled 82 percent of their beverage containers in 2010, matching the state's best-ever recycling rate. Recycling rates were strong for the three major material types included in the California Redemption Value (CRV) program. Aluminum recycling rose to 94 percent in 2010 from 91 percent the previous year; No. 1 plastic (PETE) recycling declined to 68 percent from 73 percent; and glass recycling rose to 85 percent from 80 percent in 2009. Other types of plastic, as well as bi-metal cans, combined to make up less than three percent of CRV beverage containers.

Overall, 20.2 billion CRV beverage containers were sold in 2010, a decline of 800 million, most likely due to weakness in the economy. Of those, 16.5 billion were returned for recycling, the second-highest number on record behind the 17.2 billion recycled in 2009, which also saw an 82 percent recycling rate.

Most recycled aluminum and glass is used to manufacture new cans and bottles, resulting in significant energy and natural resource savings when compared to the mining, transportation, and processing required to make the products out of raw materials. Plastic bottles, made from petroleum, are turned into fiber for clothing and carpet, or pellets that can be manufactured into items such as packaging or landscape materials, often at significant energy savings. Using these and other recycled materials to replace virgin materials in manufacturing processes also results in significant greenhouse gas emissions reductions.

Californians are also making tremendous progress in recycling old electronic devices, which are considered hazardous and cannot be disposed with municipal solid waste. Since 2005, more than 1.1 billion pounds of old televisions and computer monitors have been recycled through the state's Covered Electronic Waste recycling program. Currently there are approximately 600 collectors and 60 recyclers approved by CalRecycle to participate directly in the program. This infrastructure, supported by a network of transporters and handlers, offers convenient, cost-free recycling opportunities for consumers throughout the state. In administering this program, CalRecycle has partnered with the Department of Toxic Substances Control to ensure compliant materials management, to combat the potential for fraud, and to address ever-evolving market challenges (i.e. CRT glass recycling options).

Although Californians already divert solid waste at about twice the national average, we can do better. AB 341 (Chesbro, Chapter 476, Statutes of 2011) increases the statewide waste diversion goal to 75 percent by 2020, and directs CalRecycle to provide a report to the legislature no later than Jan. 1, 2014, outlining strategies to get there. Achieving this goal will require the collection and recycling of millions

of tons of additional materials, which the department sees as an opportunity to develop new markets, create green jobs, and achieve significant greenhouse gas emissions reductions. CalRecycle will begin hosting public workshops in spring 2012 to receive stakeholder input on this endeavor.

The path toward a 75 percent diversion rate will be aided by two new CalRecycle initiatives:

MANDATORY COMMERCIAL RECYCLING: AB 341 (Chesbro) also requires CalRecycle to implement a mandatory commercial recycling requirement that will result in greenhouse gas emissions reductions. Implementation will require the department to conduct extensive outreach to jurisdictions to help them develop education and monitoring programs. Subsequent CalRecycle oversight and review of jurisdiction performance also will be necessary. CalRecycle adopted the proposed regulations in January 2012.

PRODUCT STEWARDSHIP: The creation of new product stewardship programs for carpet and paint represent a major paradigm shift in how California assigns responsibility for product end-of-life management. CalRecycle is working to develop implementation regulations this year and will assess program effectiveness once industry plans are submitted to the state. The regulations for carpet and paint were adopted in January 2012. However, both AB 1343 (Huffman, Chapter 420, Statutes of 2010), related to paint product stewardship, and AB 2398 (J. Perez, Chapter 681, Statutes of 2010), related to carpet product stewardship, lack specified performance goals, which will make it more difficult for CalRecycle to take meaningful enforcement action if stewardship organizations do not significantly increase their carpet and paint recycling efforts.

Californians should be proud of the innovative recycling, composting, and waste reduction programs that continue to reduce our waste stream each year. The dramatic success of California's recycling and waste reduction programs is attributable to the committed partnership of its residents, state and local government, and the public and private solid waste/recycling industry.

As the economy rebounds, it is likely that businesses will produce more, consumers will buy more, and construction will increase. While this is great news for California, it is expected that more trash will be discarded as a result. It is critical that communities throughout California, including those currently meeting disposal reduction requirements, continue to develop and implement recycling and waste management programs to prepare for a larger waste stream that a growing economy and population will produce.

Solid Waste Disposal, Diversion, Recycling, Waste Reduction, and Reuse

Major program areas

RESEARCH AND DEVELOPMENT PROGRAM (Required by PRC Section 42650)

Recycling research central clearinghouse

In 1992, the California Integrated Waste Management Board (CIWMB), CalRecycle's predecessor, contracted with the California Council on Science and Technology to identify science and research priorities; however a formal process for conducting research was never implemented at that time. The CIWMB, CalRecycle's predecessor, adopted a CIWMB Research Model in March 2008 for coordinating solid waste research activities, pending an annual research funding level of \$2 million, which has not been available. Consequently, CalRecycle has provided limited funding for recycling research in a topical manner and made the research results available on its website. For example, all research related to organics materials is available on the organics web page, and similarly for tires. In addition, CalRecycle participates in the Climate Action Team's research working group that maintains a central clearinghouse of all climate research that has conducted since its inception.

Cooperative research and development (R&D) facilities at universities

CalRecycle – and its predecessor CIWMB -- has not established cooperative R&D facilities at the universities, but does contract with the University of California (UC) and California State University (CSU) systems to conduct multiple research projects that CalRecycle has published. A few examples illustrating the broad range of R&D topics are listed below and can be found at CalRecycle's website:

- Research on bioplastic products (Stanford, CSU Chico, UC Berkeley, UC Davis);
- Civil engineering applications for rubberized asphalt concrete and tire-derived aggregate (CSU Chico, Humboldt State University, UC Davis);
- Product stewardship approach for end-of-life product management (UC Berkeley, UC Santa Barbara);
- Field demonstration of best management practices for compost and mulch (UC Riverside); and
- Rotary drum reactor process for anaerobic digestion (UC Davis).

Feasibility of Disposal Site Mining

CIWMB addressed this requirement in 1993 with completion of a contract study and report: "Landfill Mining Feasibility Study" (contractor: CaRecovery, Inc.). Landfill mining technology received substantial interest in the early-to mid-1990s initially with East Coast projects which recovered landfill waste for feedstock in waste-to-energy facilities. In California, projects focused on mining of wood waste landfills from logging operations and mills for recovery of biomass fuel, soil amendments, and soil and rock. Currently, one project continues at the active Clovis Municipal Solid Waste Landfill in Fresno County, with combined goals of remediation for landfill gas and ground water contamination and cover soil recovery for continued operations at the new lined landfill cells. CalRecycle continues to track the development and application of landfill mining technologies to ensure protection of public health and the environment. However, development of new landfill mining projects is challenging due to cost, complexity of operations, potential environmental impacts and mitigation measures, and limited markets for recovered materials.

Educational and Promotional Methods Effecting Human Behavior

CIWMB/CalRecycle activities, coordinated by the Office of Public Affairs, are included in the Public Education component of this report.

Research on hazards from special wastes and from air emission and ash from incineration

CalRecycle and, previously, CIWMB have funded numerous research contracts to conduct health and environmental impact studies. These studies address the following topical areas: emissions of tire-derived rubber flooring products; safety of artificial turf containing crumb rubber infill; health effects of recycled waste tires in playground and track products; emissions from tires as a fuel supplement; water quality impacts from using tire-derived aggregate; emissions from a rubberized asphalt hot mix asphalt plant; used oil in bunker fuel; and characterization of used oil in stormwater runoff.

Tools for Waste Characterization, Special Waste Volumes, etc.

CalRecycle is statutorily required to collect data and conduct research to better understand California's waste amounts (Disposal Reporting), characteristics & materials (Waste Characterization), and facilities & handling capacities (Facility Information Toolbox). This allows CalRecycle and its stakeholders to strategically plan, develop, and implement recycling and solid waste programs to better manage California's resources. Data collected and our analysis of that data is provided through multiple, user-friendly portals on the CalRecycle website. These web tools include but are not limited to:

- **Disposal Reporting System (DRS)** -- Tracks the amount of disposal from every city, county and regional agency in California and is used to determine if they meet the 50 percent diversion and per capita disposal mandates. The information shows how disposal changes seasonally and over the long term (e.g. 28 percent drop in disposal since 2005 that coincides with economic downturn); measures the complex flows of waste materials between counties and can be used to assess the potential impacts of local efforts to regulate those flows; monitors patterns in Alternative Daily Cover use (e.g. overuse of green waste ADC); allows verification of disposal amounts (e.g. compared to hauler reports, locally imposed fees and the statewide disposal fee); and informs both local planning for diversion programs and additional facilities.
- **Waste Characterization Project** -- Internationally recognized for the quality and content of the statewide program effort to assess the types and amounts of waste materials still being landfilled, their sources of generation and their potential for recovery. This data is critical for the strategic policy recommendations and the development of productive and cost-effective recycling and waste management programs leading to the attainment of the 75 percent waste diversion goal. This critical research

program includes a series of staff and contract studies that cover: regional characteristics of landfilled wastes, waste generation by business type, and statutorily required targeted waste materials such as plastic bags, carpet, and paint. Rigorous analysis of the collected data has identified trends, highlighted opportunities, supported policy development, and used to develop useful tools. The next statewide study (scheduled for 2014) will assess the impact of the mandatory commercial recycling program and continue to provide fundamental data for assessing progress and supporting policy development.

- **Facility information Toolbox (FacIT)** -- FacIT contains an inventory of solid waste material processing, disposal, recycling and recycled-content manufacturing facilities in California, and can be searched by clicking on a map or by entering facility names or key word descriptors. Basic information on each facility is provided including location, contact information, estimated facility throughput and capacity tonnage ranges, materials handled and activities undertaken. FacIT also has modeling tools that project waste disposal quantities (statewide, regionally & by county) through 2025, and allow users to estimate the potential capacity needed for different types of recycling or waste management facilities. To connect buyers to recycled-content manufacturers, FacIT also contains an inventory of California businesses that produce products from recycled materials that can be searched on various criteria (e.g. California Small Business status, California Disabled Veteran Business Enterprise status, State Agency Buy Recycled Campaign compliant products, feedstock(s) used, and product categories produced).
- **Data Central** -- A web portal that provides quick access to a wide variety of data-rich web products and tools relating to California's solid waste stream, waste disposal and recycling facility infrastructure, materials flow, recycling programs, and much more. The goal of Data Central is to be a one-stop shop for often asked and readily answered data-centric questions for a variety of audiences (media, legislative, legal, constituent inquires, stakeholders, and the general public).

Plastics recycling (Required by PRC Section 42520)

CalRecycle staff operates a Plastics Recycling Information Clearinghouse which includes a publicly accessible plastics database with information about plastic recycling and reprocessing facilities in California. The database is utilized by interested parties to locate plastic recyclers, processors, and brokers, as well as obtain information on plastics recycling, the At-Store Recycling Program for plastic bags, the Rigid Plastic Packaging Container Program, the Beverage Container Recycling Program, and the Hospital Blue Wrap Program. Through the database, CalRecycle researches and makes available information on new trends such as the introduction of bioplastics into the recycling system, and new technologies such as optical sorting of bioplastics which may impact plastic recycling and agricultural plastic recycling technologies.

Landfill gas monitoring (Required by PRC Section 43030)

CalRecycle and its predecessor agencies have enforced landfill gas monitoring and control standards for subsurface migration of landfill gas since the 1970s. Initial regulations were general in nature and required monitoring and control “as necessary” for protection of public health and safety and the environment. These regulations applied to all disposal sites, including active, closed, abandoned, and illegal. In 1990 as part of AB 939 implementation, emergency regulations were developed which spelled out detailed standards for landfill gas monitoring system probe design and control implementation. In 1991, U.S. EPA developed Resource Conservation and Recovery Act Subtitle D regulations requiring landfills to monitor and control landfill gas for subsurface migration. California’s approved program included existing state landfill gas standards that were far more stringent for active landfill than for closing and closed landfills. CalRecycle reviewed and revised the regulations in 2007 to apply the more stringent standards for closed landfills to active landfills. By fall 2011, approximately 96 percent of the 143 active landfills required to install new monitoring systems had installed the systems in accordance with the new requirements. In addition, approximately 40 percent of those landfills have required remediation from violations and currently approximately 10 percent remain to achieve full compliance and are subject to compliance and enforcement actions. CalRecycle continues to ensure appropriate enforcement action is undertaken to achieve timely compliance and protection of public health, safety and the environment.

Managing waste tires (Required by Chapter 17 of Part 3 of PRC, beginning with Section 42860)

CalRecycle has not provided a report specifically on the comparative costs and benefits of recycling or conversion processes for waste tires. However, a comprehensive evaluation was conducted in 2010 by R.W. Beck that examined CalRecycle’s tire market development programs and provided recommendations for improving existing programs. This report included information on market trends in end-uses, funds spent on different tire grant programs, and an average dollar per tire expended via specific grant programs on projects involving rubberized asphalt concrete, various tire-derived products (such as playground surfacing, walkways, tracks, landscaping material, mats, etc.), collection via amnesty events, and cleanup. The recommendations regarding existing programs included, for example, establishing a new tire-derived aggregate grant program, focusing tire-derived aggregate and rubberized asphalt concrete technical assistance on top-priority opportunities and barriers, and expanding and focusing education and training on top-priority market expansion opportunities; it also discussed a number of changes that would require legislation, such as expanding current procurement mandates and applying a product stewardship approach to waste tire end-of-life management. In addition to this report, CalRecycle also has funded specific research contracts to assess benefits and costs of different management methods, including tire-derived aggregate, rubberized asphalt concrete, and other processes such as pyrolysis, gasification, and devulcanization.

Public education/public outreach (Required by Chapter 12 of Part 3 of PRC, beginning with Section 42600)

Together with its local assistance programs, CalRecycle's Office of Public Affairs works to promote the department's mission and initiatives through strategic marketing and communications, media relations, public outreach, and education. CalRecycle works to inspire and challenge Californians to achieve the highest waste reduction, recycling, and reuse goals in the nation; public outreach and education furthers these goals by increasing public understanding of waste management and recycling programs, and suggesting appropriate steps to increase that awareness. The department routinely interacts with television, print, and radio media on stories relative to CalRecycle activities and programs, and historically has used contract resources to enhance efforts to increase environmentally responsible behavior among Californians. These have included campaigns to promote beverage container recycling, the use of recycled tires in road repair and construction, the use of re-refined oil, avoiding too-frequent oil changes, and tire sustainability, among others. In 2011, CalRecycle engaged in three significant education campaigns using contract resources:

- “Just Check It” tire sustainability campaign: CalRecycle promoted the idea that by maintaining proper automobile tire pressure, California motorists would be safer on the road, save money by extending the life of their tires, and help the environment by reducing the number of waste tires that need to be recycled or disposed. Paid radio advertising, news media story placement, television public service announcements, social media, and partnerships with automotive-related entities were the primary outreach strategies. The two-year, \$2.2 million statewide campaign ended in September 2011.
- “Green Roads” tire-derived products campaign: CalRecycle produced video and print resources, placed articles in trade publications and an op-ed in mainstream media, and conducted meetings and workshops to encourage local jurisdictions to consider using tire-derived products in roadwork and engineering projects. In particular, the campaign encouraged the use of rubberized asphalt concrete, which uses crumb rubber from recycled tires in road surfacing, and tire-derived aggregate, an alternative to mined aggregate. The two-year, \$800,000 campaign ended in June 2011.
- “Check Your Number” oil change interval campaign: According to CalRecycle research, nearly half of California motorists adhere to an outdated stand-by and change their motor oil every 3,000 miles. The vast majority of cars built since 2000 have higher manufacturer-recommended oil change intervals of 5,000 miles, 7,500 miles, or even higher. The “Check Your Number” campaign encourages motorists to know what their manufacturer recommendation is, and to consider their specific driving conditions, so they can make a fully informed decision about how often to change their motor oil. Since the campaign launched in November 2011, visits to the www.checkyournumber.org website have spiked from an initial 200 per day to an average of 6,000 per day, thanks to coverage of the campaign in the Los Angeles Times, New York Times, California television news stations, and a host of online publications. The 18-month, \$1.2 million campaign is scheduled to run through December 2012.

In addition, CalRecycle coordinates participation at relevant conferences, expositions, and fairs, to represent CalRecycle programs and engage with the public. CalRecycle further extends its

public education reach by regularly engaging with California's online communities. Staff uses social marketing tools to promote recycling, waste management, and sustainability, with a particular focus on Facebook, Twitter, and YouTube page followers. As of December 2011, CalRecycle's Facebook page has more than 3,000 "fans." Additionally, the department produces dozens of staff reports/publications that are accessible online via the CalRecycle website's publications catalog, and manages a toll-free call center to address stakeholder needs and answer questions from the public relating to recycling, waste reduction, and product reuse.

School source reduction and recycling (Required by Chapter 12.5 of Part 3 of PRC, beginning with Section 42620)

School districts have not been required to implement source reduction and recycling programs, but CalRecycle has worked with them on a voluntary basis. Under the auspices of the former CIWMB, staff conducted two surveys and prepared two reports for the years 2000 and 2003 to assess the status and effectiveness of school district source reduction and recycling programs. While the response rate of 42 percent of school districts, representing 55 percent of total student enrollment and schools, was considered good, it was not possible to determine if 75 percent of schools were participating in diversion programs. This is the result of schools not being mandated to participate in the survey process. Thus, CIWMB did not recommend statutory changes; however, a number of programmatic efforts were initiated, including:

- An online technical assistance resource was developed for school districts.
- Staff conducted pilot case studies on food waste diversion programs at school districts and promoted those case studies.
- Staff formalized collaborative partnerships with school district professional organizations to promote the implementation of school district waste reduction programs and CalRecycle's related School Waste Management Education and Assistance tools and resources.

Integrated Waste Management Educational Program and Teacher Training Plan
(Required by Part 4 of Division 34 of PRC, beginning with Section 71300)

As a result of SB 63 (Strickland, Chapter 21, Statutes of 2009), the Environmental Education Initiative is no longer under the auspices of CalRecycle and is currently being implemented by the California Environmental Protection Agency. For more information, visit: <http://www.calepa.ca.gov/education/eei/>.

California Materials Exchange Program (CalMAX) (Required by subdivision (a) of PRC Section 42600)

Since 1992, the California Materials Exchange (CalMAX) Program has helped California businesses, public agencies, non-profit organizations, schools, and residents exchange unwanted materials for reuse or recycling. Whether it was the print catalog or the searchable online database, CalMAX helped Californians save money and conserve resources. Since the program's inception, CalMAX has diverted over one million tons of material from California landfills.

Today, stakeholders have many options that did not exist 20 years ago, from on-line materials-exchange websites to powerful search engines. Consequently, CalMAX usage had dropped from thousands of users to only a dozen or two at any given time. CalMAX staff reassessed the program and the options available to today's consumers and determined the best option was to convert CalMAX from an online database to a web portal. In 2011, CalMAX transitioned from an online database of materials to reuse and recycle to a single web portal, where CalMAX customers can link directly to one of the many materials exchange options now available.

MARKET DEVELOPMENT PROGRAM

Working with the public, private sectors (Required by paragraph (4) of subdivision (b) of PRC, Section 40507)

CalRecycle adopted a comprehensive market development strategy in 1993 and revised it extensively in 1996. The plan included specific activities that were focused on paper, compostables, inerts, wood, plastics, and tires, along with activities related to recycling infrastructure development and "buy recycled" outreach. Since then, CalRecycle has developed more focused plans for specific aspects of the waste stream, with a principal focus on organic materials, construction and demolition debris, beverage containers, tires, and problematic wastes such as paint. CalRecycle also implements, pursuant to specific legislation, significant market development efforts such as minimum content packaging and product stewardship programs.

Pursuant to AB 341's new 75 percent statewide diversion goal and the requirement that CalRecycle provide recommendations to the Legislature on how to achieve that goal, CalRecycle will hold stakeholder workshops in spring 2012 that will include a high-level overview of market development efforts, gaps, and barriers. These workshops will address a wide range of issues relative to market development, including the impact of counting alternative daily cover as recycling on composting markets, the state's reliance on volatile export markets (and associated low-value transactions) for many collected materials, and whether the state has done enough with its procurement policies to stimulate markets for recycled-content products.

CalRecycle also has worked extensively to develop direct liaisons with private recycling manufacturing industries in the state and to leverage available financial resources for expansion of recycling industry capacity. For example, CalRecycle established the Recycling Market Development Zone (RMDZ) program to work with private manufacturing industries; this program includes a low-interest loan program (see Section 4C below), along with technical assistance in locating feedstock, finding suitable sites, and navigating permitting processes. CalRecycle leverages other available financial resources by working

directly with funding entities such as the California Pollution Control Financing Authority and California Small Business Development Centers, and by facilitating partnerships with entities such as the Small Business Administration and the Governor's Office of Business Economic Development (GOBIZ). CalRecycle also has worked through the RMDZ program to establish formal market development zones and assist local officials in including the zones and associated recycling activities in their county economic development plans.

Regarding state, local, and private industry procurement practices, CalRecycle has implemented numerous activities. At the state level, CalRecycle has worked primarily with Department of General Services and its environmentally preferable purchasing (EPP) efforts, including co-leading the EPP Task Force in the mid-2000s until legislation shifted that responsibility primarily to Department of General Services, as well as with hundreds of state agencies annually through the State Agency Buy Recycled Campaign and its training assistance and reporting requirements. CalRecycle also provides assistance to local governments on their procurement policies, and CalRecycle reviews local government efforts in this arena as part of AB 939's formal review of local jurisdiction diversion program implementation. In addition, local jurisdictions must adopt an EPP policy in order to receive CalRecycle grants, and grant agreements require that items purchased with grant funds contain recycled content materials. Despite these efforts, much more can be done to make state and local procurement a significant factor in further developing market demand for recycled-content products, and opportunities improvement in procurement will be an integral part of the workshops CalRecycle holds in spring 2012 on how to achieve the statewide 75 percent diversion goal.

Assisting local agencies (Required by PRC Section 40913)

CalRecycle's overall effort to assist local agencies in identifying markets typically entails staff (from multiple divisions) working collaboratively with jurisdictions to provide market information and facilitate connections with collectors and recycling manufacturers. In most cases, this supplements the activities of existing franchised haulers and independent recyclers already working with and in a given jurisdiction, as these entities are usually directly responsible for actual market transactions involving collected materials. CalRecycle's tools and efforts include: the RMDZ program, which provides low-interest loans and technical assistance (such as identifying sources of recycled materials, potential facility sites, etc.) to individual recycling manufacturers and jurisdictions; working with individual jurisdictions to identify collectors and recyclers available in the geographic region for materials ranging from food waste to plastic film and other materials; providing grants to jurisdictions to increase demand for products such as beverage containers, used oil and household hazardous waste, tire-derived aggregate and other tire-derived products; providing jurisdictions and businesses with models and tools such as a programmatic environmental impact report for anaerobic digestion; assisting jurisdictions with the planning phase of diversion facilities; and, providing online tools such as FaCIT, CalMAX, recycled-content products and Recycle Store web portals. CalRecycle also collaborates with other state agencies to foster incentives for markets and recycling facilities. These include working with the Air Resources Board to establish a low-carbon fuel standard pathway for anaerobic digestion and, through the Cap and Trade program, explore financial incentives for recycling manufacturing in California; the California Energy Commission to allocate AB 118 (Nunez, Chapter 750, Statutes of 2007) funding for anaerobic digestion facility grants; and the Employment Training Panel on training for manufacturers. In early 2012, CalRecycle will hold public workshops on what new tools and policies are needed to stimulate market development on a statewide basis in order to reach the new statewide 75 percent diversion goal.

Recycling Market Development Zone Loan Program (Required by Article 3 of Chapter 1 of Part 3 of PRC, beginning with Section 42010)

The Recycling Market Development Revolving Loan Program provides direct, low-interest loans to qualified borrowers for the manufacture of recycled-content materials. In 2011, the program funded six loans totaling \$3.5 million. Approved loan recipients recycle/process paper, plastic, construction and demolition debris, and organic green waste materials. These new loans are projected to divert an additional 15,000 tons of non-hazardous solid waste annually from California landfills and create 32 new jobs. The current loan portfolio consists of 47 open loans totaling \$34 million. CalRecycle also coordinates business finance activities with other governmental entities such as the State Treasurer's Office, the Department of Housing and Community Development, and the California Small Business Development Center.

Loan demand for the 2012 calendar year is approximately \$5.4 million, based on recent applications from businesses that recycle/process green waste, waste plastic, textile, carpet, and tire materials. The loan program collects approximately \$3 million in loan repayments annually that is available to fund new loans. With the decrease in revenue in the Integrated Waste Management Account, it will be a challenge to keep the loan program subaccount sufficiently capitalized in future years.

Compost Market Program (Required by Chapter 5 of Part 3 of PRC, beginning with Section 42230)

In 2010, more than 200 facilities processed approximately 9 million tons of organic material, including food and vegetative material, into compost and other products. This infrastructure has grown significantly since the early 1990s, aided in part by CalRecycle demonstration projects, research studies, funding, education and promotion, standards development, siting and capacity development, CalRecycle regulations, and coordination with other agencies on their regulations. Challenges to further development include economic issues associated with new and emerging regulations for air quality and water quality, registration of bulk compost used for organic production, regulated pests that affect movement of organic material between regions, use of organic materials for alternative cover at landfills that could otherwise be used to produce compost, and food residual management.

CalRecycle is working with relevant agencies on several state policy drivers that have the potential to significantly impact compost markets. These include the Global Warming Solutions Act (AB 32) and the Low Carbon Fuel Standard under the auspices of the Air Resources Board; the Renewables Portfolio Standard, the AB 118 Alternative and Renewable Fuels and Vehicles Program, and the Bioenergy Action Plan under the Energy Commission, and a Statewide Order for composting facilities under the State Water Resources Control Board.

Past efforts by CalRecycle related to compost markets include the following:

- Funded several agricultural demonstration projects demonstrating compost benefits (PRC 42241.5).
- Assisted Caltrans in developing specs on roadside application of compost, producing a compost use manual, and holding workshops for Caltrans and other stakeholders (PRC 42240, 42241).
- Assisted Department of General Services in development of Environmentally Preferred Purchasing guidance on compost and mulch (PRC 42240).

- Developed tools to assist local jurisdictions on market development plans that support the diversion of green materials from landfills and minimize alternative cover use.
- Collaborated with Department of Water Resources on its Model Water Efficient Landscape Ordinance promoting sustainable landscapes by using compost and mulch.

CalRecycle has achieved several milestones, including:

- Continued collaboration with the Air Resources Board, air districts, regional water boards, U.S. EPA, Department of Pesticide Regulation, and California Department of Food and Agriculture on the AB 32 Scoping Plan, regulatory requirements related to compost facilities and applications, and pesticide residues in compost.
- Continued research contract work on compost in agriculture, water retention and erosion control, restoration of fire-ravaged land, methane, volatile organic compounds and other emissions, and best management practices.
- Developed the Facility Information Tool (FacIT), an effort to inventory California’s solid waste handling, diversion, and market infrastructure.
- Commenced rulemaking on mandatory commercial recycling, which will divert additional organic materials.
- Conducted technical analyses that quantify environmental benefits, including erosion control, water holding capacity, and greenhouse gas reductions.
- Continued to provide low-interest loans through the Recycling Market Development Zone Loan Program for compost projects.
- Promoted the benefits of compost and mulch, such as its positive impacts on climate change, water conservation, water quality, and soil health, and its short and long-term benefits to agriculture.
- Assisted Air Resources Board in development of an anaerobic digestion pathway for its Low Carbon Fuel Standard.
- Funded development of a programmatic environmental impact report on anaerobic digestion which focuses primarily on food and green waste feedstock.

Reporting on development and implementation of a comprehensive Market Development Plan
(Required by Article 2 of Chapter 1 of Part 3 of PRC, beginning with Section 42005)

This requirement is met through responses under the “Market Development” section of this report.

State government use of retreaded tires (Required by PRC Section 42414)

The number of retreaded tires purchased by the Department of General Services (DGS), and other state agencies, are reported each fiscal year via the State Agency Buy Recycled Campaign (SABRC) annual report. The program was authorized by AB 4, passed in 1989 (Eastin, Chapter 1094), modified in 1993 (AB 11, Eastin, Chapter 960), and updated in 2006 (SB 1106, Senate Environmental Quality Committee). The SABRC statutes are in Public Contract Code Sections 12153-12217. This program requires state agencies to purchase recycled-content products in 11 categories, including retreaded tires. According to the 2010/2011 fiscal year SABRC report, Department of General Services spent \$469,000 on retreaded tires (CalRecycle staff is currently in the review process and has not yet completed the review to determine the accuracy of the 2010/2011 reported information).

Tire retread quality assessment (Required by PRC Section 42415)

The Department of General Services uses the Federal Motor Vehicle Safety Standards that are determined by the U.S. Department of Transportation for the performance and quality standards for retreaded tires per PRC 42401. CalRecycle partnered with Tire Retread and Repair Information Bureau to produce educational material and a video to demonstrate to fleet managers the benefits of using retreaded tires.

Recycled lead-acid batteries (Required by PRC Section 42443)

The number of recycled lead-acid batteries purchased by Department of General Services has not been reported to CalRecycle for the past fiscal year, nor is CalRecycle staff aware of any data available for recent past years. CalRecycle staff is not aware of any state contracts offered for or by Department of General Services, for recycled lead-acid batteries, from which data would be obtained.

Price preferences for recycled paper products (Required by paragraph (1) of subdivision (c) of Public Contract Code, Section 12162)

Public Contract Code Section 12162 was previously repealed, in its entirety, by SB 1106 (Senate Environmental Quality Committee), Chapter 590, Statutes of 2005.

White office paper recycling (Required by Chapter 10 of Part 3 of PRC, beginning with Section 42560)

In 1989, the High Grade White Office Paper Recovery Assistance Program was implemented pursuant to PRC 40507(c). This program assisted in increasing the recovery of white office paper, which is now a routinely recycled commodity. CalRecycle continues to encourage recycling of white office paper in addition to other types of paper by providing technical expertise on paper recycling and by maintaining a comprehensive paper recycling website. White office paper recovery is also a focus of Project Recycle and AB 75 state agency programs. CalRecycle also supports markets for recycled paper by actively promoting the purchase of recycled content paper through the “Buy Recycled” program. The new statewide 75 percent diversion goal will provide for even further white office paper diversion along with other materials.

USED OIL PROGRAM

Annual program audit (Required by Chapter 4 of Part 7 of PRC, beginning with Section 48600)

In accordance with PRC 48657, CalRecycle contracts with the Department of Finance for an annual financial review of the Used Oil Fund. The review includes interviewing staff and examining various CalRecycle documents related to fund revenues and expenditures pursuant to state law and the State Administrative Manual. An entrance conference is held with Department of Finance auditors and CalRecycle management staff in the late fall, and the audit is generally completed in the spring (for the preceding fiscal year). Draft and final reports are provided and the final report, along with a formal response from CalRecycle is placed on the Department of Finance website.

Recycling incentives (Required by Chapter 4 of Part 7 of PRC, beginning with Section 48600 and Section 48650)

In 2009, the passage of SB 546 (Lowenthal, Chapter 353, Statutes of 2009) resulted in a number of changes to the California Oil Recycling Enhancement Act (CORE) including streamlining grant programs, revising requirements for used oil certified collection centers, restructuring the oil fee and incentive payments, establishing certification requirements for re-refining facilities, and requiring testing for out-of-state transfers of used oil. The fee paid by manufacturers of lubricating oil sold in California was increased from \$0.16 per gallon to \$0.26 per gallon, except for manufacturers of re-refined oil who pay \$0.12 per gallon. Incentive payments to collection centers for collecting/recycling used oil from the public have increased to \$0.40 per gallon. The law also establishes an incentive payment of \$0.02 per gallon for the production of re-refined oil beginning in 2013. Of the increased manufacturers' fee, \$0.02 per gallon (collected through December 2013) is to be used to conduct an independent life cycle assessment of the used oil management process from generation through collection, transportation, and reuse alternatives. A report to the Legislature regarding the life cycle assessment is due by January 1, 2014. The life cycle assessment is currently in progress and engaging a broad stakeholder group.

Projected revenue for the oil fund over the next two years is approximately \$27 million per year, of which \$11 million is allocated annually for payments to local jurisdictions to implement used oil and oil filter collection and recycling programs. Other expenditures include the incentive payments (approximately \$5 million); public and private contracts and grants (including \$2 million for the life cycle assessment and contracts with the Department of Toxic Substances Control for facility inspections and used oil hauler oversight); public education and outreach programs; and operational costs. Over the next two years, CalRecycle plans to increase technical assistance to local governments to assist in developing and implementing effective programs. While the sales of new lubricating oil have declined sharply over the past three years, the volume of used lubricating oil collected has remained steady, resulting in a recycling rate slightly under 80 percent in 2010. The 4,257 certified collection centers in the state are responsible for collecting more than 90 percent of the Do-It-Yourselfers' lubricating oil, with local government and curbside programs responsible for the remaining volume.

Model county/regional siting element (Required by paragraph (6) of subdivision (b) of PRC, beginning with Section 40912)

In 1994, CIWMB published "How to Prepare a Countywide or Regional Siting Element." Staff reported on the model in the 1994 CIWMB Annual Report: "Progress Through Partnership." The CIWMB developed and distributed several planning document models for use by jurisdictions. A number of jurisdictions have used the models and, as a result, have been able to save a significant amount of time and money. The models that were created included a Countywide/Regional Integrated Waste Management Summary Plan and a Countywide/Regional Siting Element.

Assist local government development of source reduction plans (Required by subdivision (c) of PRC, beginning with Section 40912)

CalRecycle adopted a Waste Reduction Plan in the 1990s, and since then has provided assistance to cities, counties, and regional agencies in the development and implementation of source reduction programs pursuant to subdivision (c) of Section 40192. Assistance has included providing resources from various agencies, such as U.S. EPA, case studies, a waste reduction awards program for businesses, CalMAX, peer matching, videoconferences, workshops, sample outreach materials, local policies, etc. Staff assigned to individual jurisdictions also provides direct technical assistance to jurisdictions in implementing the programs that they selected in their Source Reduction and Recycling Element. CalRecycle also formally reviews local government efforts in this arena as part of AB 939's formal

review of local jurisdiction diversion program implementation. Also, CalRecycle developed a Best Practices in Waste Reduction Video (October 2009), accessible via You Tube or our Video Central Training webpage. Additionally, CalRecycle established a Reuse Assistance Grant Program in 1999 to provide funding for California local public agencies to promote the reuse of nonhazardous material(s), but that program ended in 2007.

Assist rural cities and counties with source reduction plans (Required by PRC Section 41787.3)

Rural jurisdictions face unique challenges in meeting the 50 percent waste disposal reduction requirement, such as distance to market, staffing resources, and low population densities. To address these challenges in meeting planning requirements and implementing diversion programs, a number of tools, resources and partnerships have been developed for rural jurisdictions. Regarding planning, a model Source Reduction and Recycling Element was developed to help guide rural cities and counties through developing their plan in an efficient manner. Staff works closely with each jurisdiction to assist them with the planning process. Additionally, staff provides assistance regarding petitions for rural reductions and other relief measures provided by law for rural jurisdictions. The resources that have been developed to address program implementation for rural cities and counties include: a rural web toolkit that helps rural jurisdictions share ideas about what works to reduce waste; models; case studies; videoconferences that highlight successful programs; market development resources that focus on cooperative marketing; and grants and loans available to rural jurisdictions. Staff also works closely with the Regional Council of Rural Counties to provide assistance to rural jurisdictions and identify tools and assistance that are needed.

Report on tire recycling, diversion (Required by paragraph (6) of subdivision (b) of PRC, Section 40507)

During 2010, Californians generated 41 million waste tires. Of that total, California beneficially reused or recycled 33 million waste tires, for a recycling rate of 81 percent. The California Waste Tire Market Report for 2010 shows an increase of waste tire diversion rate from 73 percent in 2009 to 81 percent in 2010. This increase is due to the growth in the ground rubber market for tire-derived products, the use of tire-derived aggregate in landfill and civil engineering applications, the use of rubberized asphalt concrete, and the continued rapid growth in the export of baled and processed waste tires to Pacific Rim nations, largely for use as tire-derived fuel. The export of baled waste tires to China is particularly controversial.

Provide technical assistance to rural jurisdictions (Required by PRC Section 41782)

CalRecycle developed and implemented regulations providing jurisdictions that meet specific requirements the ability to deduct qualifying disposal tonnages from the tonnages reported by regional diversion facilities and medical waste facilities. Staff developed a form that jurisdictions use to submit their request with their electronic annual report. Staff also provide technical assistance to jurisdictions to help them understand the specific statutory requirements, necessary documentation needed, and to assess if those requirements can be met. In the 2010 Annual Report cycle, eight jurisdictions submitted requests for regional diversion facility disposal deductions totaling approximately 130,000 tons, and two jurisdictions requested medical waste facility disposal deductions totaling approximately 37,000 tons.

CalRecycle works extensively with individual rural jurisdictions and with the Environmental Services Joint Powers Authority to provide technical assistance on individual programs, case studies, and peer

matching. This includes assistance in developing methods to raise revenue at the local level to fund rural integrated waste management programs by providing examples of franchise agreements and by peer matching.

Implement state government “Buy Recycled” program (Required by subdivision (d) of PRC Section 42600, and Public Contracts Code Sections 12164.5 and 12165)

Project Recycle was initiated more than 30 years ago to assist state agencies with recycling in state-occupied buildings. At that time, recycling knowledge and infrastructure were limited. Since then, a robust recycling infrastructure has evolved, and AB 75 (Strom-Martin, Chapter 764, Statutes of 1999) was enacted mandating recycling by state agencies. Through these developments, Project Recycle has evolved from support for state agency recycling programs into providing technical assistance to agency recycling coordinators, reviewing agency annual recycling reports, and maintaining three statewide recycling contracts. One contract is for the collection of paper and beverage containers in the Sacramento area, and the other two contracts provide scrap metal recycling for state agencies in Southern California. In 2010, the contractors collected more than 3,815 tons of paper and cardboard and 754 tons of scrap metal from 265 state-occupied facilities, generating \$230,640 to the Integrated Waste Management Account (IWMA). State agencies may retain annual revenue up to \$2,000 to offset recycling program costs, but any revenue exceeding that amount is credited to the IWMA. In the future, CalRecycle would like to see state agencies retain all revenue generated through their recycling programs to enhance their agency-specific recycling programs.

Although the Legislature and the Governor’s Office are not covered under this mandate, both have been furnished with recycling bins and are actively recycling. CalRecycle staff is providing technical support to increase recycling efforts at the state Capitol complex.

SITE CLEANUP PROGRAM

Disposal and Codisposal Site Cleanup Program (Required by paragraph (7) under subdivision (b), pursuant to Article 2.5 of Chapter 2 of Part 7 of the PRC, beginning with Section 48020)

Since being established by AB 2136 (Eastin, Chapter 655, Statutes of 1993), the Solid Waste Disposal and Codisposal Site Cleanup Program (Cleanup Program) has cleaned up more than 1,300 sites, including 850 illegal disposal sites, 75 legacy landfills and burn dumps, 70 illegal waste tire piles, and 320 disaster debris sites, including the Angora wildfire in South Lake Tahoe and San Bruno pipeline disaster. More than \$145 million in funding (including tire program funding), along with \$75 million in additional leveraged funding, and more than \$14 million in cost recovery, has been utilized by the program to meet its statutory requirements. All CalRecycle costs were recovered for the disaster debris sites (approximately \$10 million). Demand for program resources includes about 60 percent for CalRecycle-managed projects using its contractors, and 40 percent for direct grants to local government.

New sites requiring cleanup where there is no responsible party (or the responsible party is unable or unwilling to pay for cleanup) continue to be identified. Older known sites from CalRecycle’s inventory (more than 1,200 sites) may require new cleanup projects because of changes in land use and lack of maintenance. Typical sites cleaned up under the program include the following categories (with specific examples):

- Illegal disposal sites operated as “sham” recycling facilities (La Montana/Aggregate Recycling, Mission Fibers, Crippen emergency and final);
- Legacy open community dump illegal disposal sites (Torrez Martinez Reservation; Johnson Road, Route 66 sites);
- Pre-regulation landfills and burn dumps with maintenance and corrective action issues (Candlestick Point State Recreation Area, City of Duarte Landfill, Glass Beach Burn Dump/McKerricher State Park);
- Stormwater trash outfalls (City of Los Angeles and Los Angeles County);
- Illegal dumping grant projects (City of Los Angeles, San Francisco, Los Angeles County, Riverside County)
- Disaster debris (Angora Wildfire and San Bruno Pipeline Disaster);
- Illegal Tire Piles and Residual Tire Fire Sites (Tri-C Woodland, Sonoma Tire Piles, Westley and Tracy tire fires -- through former Waste Tire Cleanup Program now part of Solid Waste Cleanup Program); and
- Abandoned vessels and marine debris (Sacramento-San Joaquin Delta -- Contra Costa and Sacramento counties, Petaluma River).

Enforcement actions at new and older sites may take years to conclude and may or may not result in need for program resources. Emergency actions under the program may be required for unforeseen disasters. The cleanup program typically has several dozen sites under investigation for potential future cleanup actions where local, state, and federal agencies have requested assistance and enforcement or project permitting issues are in progress.

LOCAL ENFORCEMENT AGENCY PROGRAM

In order to meet this requirement in a comprehensive manner, CalRecycle will be posting on its website the 2010 Solid Waste Enforcement Report. This report will include a detailed analysis on a variety of topics including: local enforcement agency performance, waste tire compliance, local government diversion programs, and minimum content programs. The Department expects the report to be completed by April 2012.