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A Californian's Guide to Small-Scale Composting and New Organic Waste Laws

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Introduction

When food and plant materials break down in a landfill, they release potent greenhouse gases, including methane, a major driver of climate change. In California, these materials are legally categorized as organic waste, which includes food scraps, yard trimmings, paper, and cardboard. By the early 2000s accumulated research findings demonstrated that composting organic waste significantly reduces greenhouse gas emissions compared to landfilling. In response, in 2016 California enacted the Short-Lived Climate Pollutant Reduction Strategy (California State Legislature 2016), also known as California Senate Bill 1383 (SB 1383), which mandates organic waste collection services for all residents and businesses. This law requires jurisdictions to divert 75 percent of organic waste from landfills, compared to 2014 levels, through a combination of composting and the recycling and recovery of organic materials, including food waste.

Despite this mandate, the infrastructure for commercial food waste composting has not yet scaled to meet the demands of SB 1383. Challenges such as permitting hurdles and local opposition have hindered progress. Residents and landscapers can help achieve these goals by composting and mulching to build healthy organic matter directly in their own yards and gardens.

This publication is based on chapter 1 of the *University of California Cooperative Extension Placer County Master Composter Training Manual* (UCCE 2002) with substantial updating to reflect current California organic waste laws and climate goals.

The limits of landfills

Landfills occupy valuable space and represent a waste of resources that could be recycled. Other affluent nations, such as Germany and Japan, generate less than half the waste per person compared to the United States, demonstrating that a high standard of living doesn't require excessive landfill use. Recycling and composting are essential for reducing the environmental and economic burden of landfills and promoting a more sustainable approach to resource management.

In California, although we have more space for landfills, they present a host of other problems:

- **Landfills are difficult to site** because no one wants one in their community.
- **Landfills are expensive to site.** Limiting the impact of landfills on groundwater and other resources has dramatically increased their cost.
- **Transporting materials to landfills is becoming increasingly expensive** as urban areas expand and landfills are sited further away from population centers.

- **The decomposition of this organic waste in landfills accounts for approximately 20 percent of California's total methane emissions** (CalRecycle 2021). Methane is a major end-product of decay under the oxygen-free, anaerobic conditions within landfills.

Residents can help their community divert waste from landfills and convert it into resources by first understanding what goes into our trash cans and what happens after we throw it away.

Finding value in organic wastes

Organic waste makes up over half of California's municipal solid waste stream (CalRecycle 2025). When dealing with these materials, the primary objective, as with all solid waste, is to identify a higher-value use beyond landfill disposal. To guide actions in managing wasted food, the United States Environmental Protection Agency (US EPA) has developed a Wasted Food Scale that prioritizes the most beneficial uses of food that might be wasted (fig. 1). This framework ranks solutions based on their environmental benefits and potential contributions to a circular economy.

The scale emphasizes that the best approach to food waste is prevention, producing and buying only what is needed. When surplus food does occur, the scale prioritizes keeping it in the food supply chain through donation and upcycling into marketable food products or animal feeds. Following this hierarchy, California's SB 1383 includes a mandate requiring the State to recover at least 20 percent of edible food that would otherwise be landfilled and redirect it to people in need. For food scraps that are no longer suitable for human consumption, processing via composting converts the organic material into a valuable soil amendment, keeping waste entirely out of the red "Avoid" zone at the bottom of the scale.

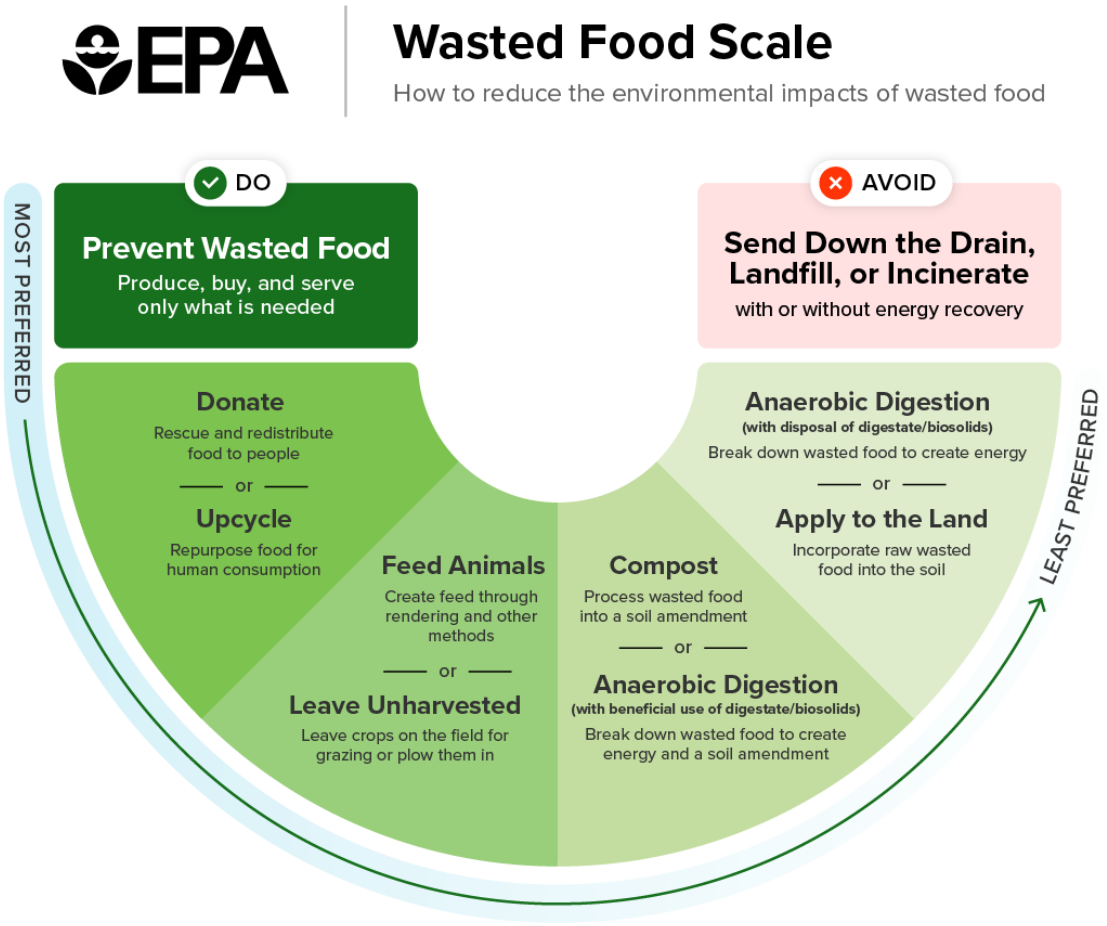


Figure 1. The US EPA Wasted Food Scale prioritization of actions that prevent and divert wasted food from disposal. *Source:* US EPA 2023.

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The value of composting: Reducing waste, creating resources

Composting is a powerful solution for reducing waste and creating valuable resources right in your own backyard or local community. Composting organic materials, like yard trimmings and food scraps, at home or in your local community offers many benefits, including:

- **Combating climate change.** By diverting these materials from a landfill to a compost pile, you prevent methane production and contribute to a healthier climate. Applying finished compost protects the climate by boosting plant and root growth, which allows ecosystems to naturally capture and store more carbon deep in the soil.
- **Enhancing soil health.** Compost transforms waste into stable soil organic matter, which improves soil structure and helps the soil retain water and nutrients. This supports a more productive and resilient garden while saving money.
- **Saving energy and money.** By composting at home, you reduce the volume of waste that needs to be collected and transported to landfills or composting facilities. This decreases the number of truck trips, cutting down on fuel consumption, preventing road wear and tear, and reducing exhaust pollution. Additionally, you can save money on waste collection fees, water costs, and soil amendment purchases.
- **Conserving water.** Compost-amended soil holds moisture more effectively, meaning your garden will require less frequent watering. This is a crucial water-saving benefit, especially in drought-prone regions.
- **Building community.** Backyard and neighborhood composting practices promote environmental stewardship and foster collaboration. Community compost hubs can also provide a central location for food distribution and community education.

Small-scale composting and California's organic waste future

By enacting SB 1383, California has chosen to pursue a comprehensive approach to solid waste disposal. It emphasizes waste reduction, recycling, and the composting of organic materials. Achieving these statewide targets relies on widespread shifts in household waste habits, supported by evolving legislation that addresses emerging waste stream challenges.

Under SB 1383 every city and county (jurisdiction) in California is required to annually procure a specific amount of products made from recycled organic waste. The procurement target for each jurisdiction is determined by a simple formula:

Target (in tons) = Jurisdiction population x 0.08 tons of organic waste per resident

For example, a city with a population of 100,000 would have a target of 8,000 tons of recovered organic waste products to procure each year.

By creating a stable demand for compost and other recovered products, the law incentivizes the establishment of more organic materials processing, such as composting, and a robust circular economy for organic waste.

Jurisdictions can meet their target by either procuring a combination of eligible products for their own use, or for the use of others. The law is designed to be flexible, allowing for a variety of activities to count, including direct purchases of:

- **Compost** produced at a permitted composting facility.
- **Mulch** or ground organic material, such as leaves, tree bark, and wood chips that meet state specifications.
- **Renewable energy** from municipal waste including renewable natural gas used for transportation fuel, electricity, or heating, and electricity from biomass conversion.

Other eligible activities

Procuring products made from organic waste doesn't have to be a direct purchase for jurisdiction use on parks, landscaping, or public projects. Jurisdictions can also count giving away compost or mulch to residents or contracting with a "Direct Service Provider" (such as a farmer, landscaping company, or a school district) to use eligible products on behalf of the jurisdiction.

The recently enacted Assembly Bill 2346 (AB 2346) (California State Legislature 2024) also expanded procurement options to include some edible food

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recovery and procurement of compost produced in small community composting operations, or from vermicompost and mushroom compost operations. In addition, until 2035, investments in market development capacity expansion activities, such as investments in community composting sites, and equipment purchases will also count towards municipal requirements.

By allowing jurisdictions to purchase compost from smaller-scale operations to count toward procurement targets, AB 2346 provides a financial incentive and a new market for community-based programs.

Cleaning up the compost stream: The battle against plastics and "forever chemicals"

As Californians step up to divert their organic waste, State leaders and local communities are making efforts to ensure the compost we produce is clean and safe. When physical and chemical contaminants enter the organic waste stream, they degrade the quality of the finished soil, posing risks to agriculture, home gardens, and human health.

The threat of microplastics. One of the most widespread contaminants in commercial compost is conventional plastic. Plastic bags, synthetic food stickers, and plastic-lined paper items often get mixed into green bins. When processed, these items don't disappear; they break down into fragments called microplastics. These persistent particles accumulate in agricultural soils, where they can disrupt soil structure, harm beneficial earthworms, and potentially be taken up by food crops.

The danger of PFAS "forever chemicals." Per- and polyfluoroalkyl substances (PFAS) are a class of synthetic chemicals historically used to make food packaging, paper plates, and takeout boxes resistant to water and grease. When these "compostable" fiber containers are broken down, the highly stable PFAS molecules leach directly into the finished compost. From the soil, these toxic chemicals can enter groundwater or contaminate local vegetable gardens.

To protect consumers and organic farmers, California has enacted strict laws to actively eliminate these contaminants at the source:

- **AB 1200 (The California Safer Food Packaging and Cookware Act)** bans both intentionally added PFAS and any presence at or above 100 parts per million of total organic fluorine (a marker of PFAS) in all paper, paperboard, and plant-fiber food packaging, such as takeout boxes and wrappers.
- **SB 343 (The Truth in Labeling Law)** targets "greenwashing" by prohibiting the use of the familiar "chasing arrows" recycling symbol on any product or packaging unless a product is genuinely recycled at scale in California communities. Enforcement of SB 343 is currently on hold pending court proceedings. Importantly, even if an item meets those recycling criteria, it is legally banned from displaying the symbol if it fails the PFAS purity threshold described above. This keeps PFAS-coated packaging from contaminating the clean recycling and composting streams. Currently, recycled fiberware, including molded fiber containers and paper-based products, typically has the highest levels of PFAS.
- **AB 1201 (Compostable Labeling Requirements)** makes it illegal to sell products labeled "compostable" or "home compostable" unless they meet the State's PFAS limit and cannot break down into persistent microplastics. To further ensure soil safety, the law requires that items labeled "compostable" must qualify as acceptable organic inputs under USDA National Organic Program standards.
- **SB 54 (Plastic Pollution Prevention)** mandates that 100 percent of single-use packaging sold in California be genuinely recyclable or compostable by 2032.

Together, these protective laws help to ensure that the finished compost we apply to our gardens is clean and safe for our soils.

How you can take action today

Meeting California's climate and waste reduction goals requires participation from households, landscapers, and communities alike. Here is how you can directly participate in building a circular organic economy:

- **Buy and apply local compost.** One of the most effective ways to support SB 1383 targets is to build a market demand for the finished product. Obtain certified compost or mulch from your city's give-

away programs or purchase from local suppliers and apply it to your home gardens and landscapes to conserve water and rebuild soil organic matter.

- **Start home or backyard composting.** Divert your family's kitchen scraps and backyard trimmings directly at the source. Home composting eliminates the carbon emissions associated with waste transportation and provides you the reassurance of knowing what goes into your compost.
- **Attend an educational class.** Unsure how to balance your greens and browns or keep pests away? Look for free workshops hosted by your local University of California Cooperative Extension office, Master Gardeners, or Master Composters.
- **Support or establish a community site**. If you don't have backyard space, seek out local community gardens or neighborhood compost hubs (fig. 2; find hubs at thecacc.org/locations). With the enactment of AB 2346, your city can count compost produced at small-scale community operations toward their strict municipal targets.



Figure 2. Master Composter volunteers with a newly turned hot pile at the UCCE Community Composting Demonstration Site in Martial Cottle Park, San Jose, California. *Photo:* Jenel Vincze, UCCE.

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During the preparation of this work the author used the AI chatbot Google Gemini. The author reviewed and edited any content obtained with Google Gemini.