

## **ZERO WASTE IN THE 21ST CENTURY**

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Zero Waste is a worldwide movement which began in the mid-1990s, as communities recognized that “waste” was not inevitable. The plan is for a future that goes beyond “end of pipe” strategies, where waste is needed to be treated rather than reduced at the source. Zero Waste is part of the paradigm shift. Recyclables are what we used to keep out of the trash. Now, trash is what we have left over once we reduce, reuse, recycle, and compost.

Zero Waste is a design principle that goes beyond recycling and focuses first on reducing wastes, reusing and recycling products, and then, composting the rest. Zero Waste promotes not only reuse, recycling, and conservation programs, but also, and more importantly, emphasizes sustainability by considering the entire life-cycle of products, processes, and systems. Zero Waste systems strive to eliminate waste by reducing consumption and getting products and packaging redesigned for reuse and repair, and then recycled back into the marketplace or composted back into soil.

Communities around the globe have embraced the concept of “zero waste”, where the linear practice of extraction, consumption and disposal are shifted to a closed loop system and materials are returned to the economic mainstream. Zero waste is not a literal goal like “100 percent recycling”; we may always have some materials that cannot be recycled and cannot be designed out of the system. However, the vision of zero waste is to strive for sustainability through the following key zero waste initiatives:

- **Whole System Approach.** The concept of “zero waste” takes a whole system approach where producers and consumers consider the ultimate disposition of products and packaging. Products and packaging are reduced in toxicity and volume and designed for recycling or composting.
- **Reducing the Amount of Consumption.** To achieve sustainability, producers and consumers must reduce the consumption of natural resources. Communities can encourage this through outreach, education and social marketing, where peer groups problem-solve and innovate solutions.
- **Minimize Waste and Maximize Recycling.** Generators can strive for zero waste both by maximizing recycling and minimizing waste generation. Communities can encourage this by providing convenient and accessible recycling programs wherever materials are generated, and require its service providers to provide recycling to all of their customers.
- **Producer Responsibility.** The goal of Product Stewardship is to shift product waste management system from one focused on government funded and ratepayer financed waste diversion to one that relies on producer responsibility in order to reduce public cost and drive improvements in product design that promote environmental sustainability.

The Zero Waste Planning process is similar to preparing a community’s comprehensive general plan or solid waste management plan, including the following steps:

- Establish goals and Guiding Principles
- Engage stakeholders and policy makers
- Conduct needs Assessment
- Establish evaluation criteria and process
- Evaluate options and develop scenarios

- Assign resources and estimate costs
- Develop Implementation and Monitoring Plan

Many municipalities in the United States have prepared, adopted and are implementing Zero Waste Plans. The Plans establish a variety of zero waste goals, ranging from 70% diversion up to 100% diversion, with timeframes of 10 to 20 years.

The keys to a successful Zero Waste Plan are the incorporation of both upstream and downstream policies and programs. Upstream policies may include extended producer responsibility policies for hard to handle materials and packaging, or community based social marketing efforts that include sustained, social marketing and media campaigns. Downstream program may include material bans, mandatory food scraps or recyclables collection, and programs that target specific sectors, such as single-family, commercial businesses, hotels and restaurants.

Case studies from a number of municipalities that have prepared Zero Waste Plans will be presented, including:

Santa Monica, CA Zero Waste Strategic Operation Plan, which establishes a 95% diversion rate by 2030 and includes a series of mandatory, upstream, and downstream programs, including enhanced recycling, mandatory commercial and residential food scraps collection, and residual processing.

Austin, TX, Resource Recovery Master Plan establishes a 90% diversion goal by 2040. The City has implemented a variety of policies and programs, including plastic bag ban, universal recycling ordinance for commercial and residential properties, education and outreach and food waste collection and composting.

Los Angeles, CA Zero Waste Plan establishes a zero waste to landfill goal by 2025. The City implemented a stakeholder driven program that developed a series of Guiding Principles that promote innovation, economic development, job creation, awareness and education. New Programs included in the plan include enhanced recycling, residential and commercial food scraps collection, and new facilities to process materials.