

SECTION 2

HISTORICAL PERSPECTIVE

INTRODUCTION

Solid waste management in the City of Los Angeles has taken many interesting turns that can inform our future actions. This section provides a short retrospective on where we have been.

PRE-1960: THE OLD FASHION WAY

Along the Southern California coast, archaeologists have found trash heaps in which native Tongva and Chumash peoples disposed of their abalone and mussel shells, fish bones, broken beads, spoiled projectile points, and other refuse. Today, these heaps provide a rich record of American Indian life, and an example of how solid waste was “managed” by our Native American predecessors.

Until the 1880s, waste disposal was a private concern for each household and business. In the late nineteenth century, sanitation became a matter of public health and waste management began to be loosely regulated. In 1890, the City of Los Angeles through its Bureau of Sanitation in the Department of Public Works constructed the first solid waste crematory (incinerator) providing a city owned and operated disposal service for residential refuse. In 1943, residential collection was turned over to City forces.

Up through the mid 1950’s, the City allowed householders to burn combustible trash in backyard incinerators and to place their non-combustibles (mostly metal and glass containers) in a garbage can for collection by scavengers on flatbed trucks. These scavengers typically sorted the material into commodities for recycling – a precursor to today’s curbside recycling programs. Material that could not be burned or recycled was buried in one of the more than 100 small dumps around town. At times, these dumps were also set on fire, thus achieving a form of volume reduction at the expense of air quality.

Food waste collected from restaurants and processing plants was fed to hogs at various ranches in the LA area. At one point in the 1940’s there were over 100,000 hogs feeding on the City’s waste. Subsequent problems with animal disease forced the ranchers to “cook” the food waste in crude autoclaves to kill pathogens. The added effort

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and cost killed the entire program instead, and the food waste went back to the landfills from then until the present day.

Early approaches to landfilling had been developed by the U.S. Army in World War II and sanitary landfills became the military's preferred method of waste disposal on its bases. The strong military presence in Los Angeles during and following the war led the City to the forefront of landfill development in the United States. By the end of 1945, almost 100 cities in the US were using sanitary landfills. By 1960, this number had grown to 1,400. Landfills were loosely regulated by the U.S. Public Health Service and oversight was handed over to the Environmental Protection Agency (EPA) in 1970.

1960s: MAYOR SAM YORTY and COMBINED COLLECTION

By 1957, concerns about the air pollution generated by the backyard incinerators brought the practice to an end. Banning the burning of trash lessened air pollution but it increased opportunities for flies, mosquitoes, rats, and other disease vectors to propagate.

Sanitary landfills came into their own when backyard trash incinerators were banned. In the 1950s this seemed like the modern option and was preferred over composting, recycling, and salvaging. Not only was refuse collected, but it was compacted and buried. Larger, regional landfills came to replace the more than 100 small dumps located throughout the city.

In fact, Mayor Sam Yorty won the election of 1961 partially on a platform of solid waste reform that included the elimination of the need for residents to separate their trash into combustible and non-combustible fractions, and the advent of collection of all waste by new garbage trucks with hydraulic packing mechanisms to maximize payload weights. Thus recycling in Los Angeles was “out” and convenience was “in” until the advent of curbside recycling in the early 1990's a period of almost 30 years.

The first two “sanitary” landfills to open were in Palos Verdes and Pomona (the Spadra landfill) in 1957. Los Angeles was forced to take a leadership role in recognizing and monitoring landfill gas (LFG) in the 1950's. Vents were designed and installed to burn the gas following incidents at landfills in Monterey Park and Palos Verdes. These led to a study of landfill practices in Los Angeles and criteria for landfills were developed.

At this point, all trash was picked up either in rear-loading trucks for residential collection, or with front-loading trucks (with hydraulic forks) for commercial collection, or roll-off trucks for bulky industrial. There was essentially no recycling of this mixed material. The only real recycling was through private “scavengers” who collected source separated waste cardboard, newspaper, and office paper and delivered it to waste paper yards where the material was further sorted and baled for shipment to paper mills. Likewise, recycling of scrap metal occurred through the private sector.

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1970s: BIRTH of the ENVIRONMENTAL MOVEMENT

Following the rise of a nationwide environmental consciousness, which triggered the formation of the U.S. EPA in 1970, California's first significant regulation of the solid waste industry began with the enactment of the Solid Waste Management and Resource Recovery Act of 1972.

In 1976, the U.S. Congress passed the Resource Conservation and Recovery Act, which led to the development of national criteria for managing dumps and landfills. However, since day one, the State of California has always maintained more stringent landfill regulations than the federal EPA, and therefore has essentially managed all disposal sites at the State level.

Through the years, the City of Los Angeles has owned, operated and maintained six landfills:

- Gaffey Street (San Pedro: opened 1955 / closed 1963)
- Toyon Canyon I and II (Griffith Park: opened 1957 / closed 1985)
- Branford (Sun Valley: opened 1957 / closed 1961)
- Mission Canyon (West LA: opened 1960/ closed 1982)
- Sheldon-Arleta (Sun Valley: opened 1962 / closed 1974)
- Bishops Canyon (Elysian Park: opened 1966 / closed 1969)
- Lopez Canyon (Lake View Terrace: opened 1975 / closed 1996)

The 1970's also saw the birth of the environmental movement, Earth Day, and the first residential recycling programs. These typically involved one or more bins in which residents placed newspaper, cans and bottles that were picked up by special trucks with multiple compartments. These materials were taken to the first Material Recovery Facilities (MRFs) for processing, baling and shipment to markets. Some of these early recycling efforts were funded in part through grants from the CIWMB.

During this time, the "re-manufacturing" sector continued to expand with development of paper mills and glass bottle plants using recyclable material as feedstock in the manufacturing of new paper products and glass bottles. Most of these plants are still active today, although an increasing percentage of these commodities are being shipped to mills and processors in Taiwan, South Korea, India, and most notably of late, China.

1980s: FOCUS ON WASTE-TO-ENERGY

The 1980's ushered in a new technology on the solid waste scene: Waste-To-Energy (WTE). This technology combined MSW incineration with water-wall boilers to generate steam and often electricity, thus creating heat and power with MSW as fuel.

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With roots in Europe, the first American plants came on line in the 1970's on the east coast. U.S. companies obtained licenses for various European grate and boiler designs, with the facilities coming in two basic types: mass-burn and refuse-derived-fuel (RDF). The former, represented mainly by Wheelabrator, Martin, and Foster-Wheeler, accepted mixed MSW and fed it to the boilers with minimal pre-sorting to remove the odd large, unacceptable items. The latter, represented primarily by American Refuel and Thermal Electron, pre-processed the mixed MSW to prepare an RDF comprised primarily of paper and plastic.

Mass burn plants had the advantage of simplicity and performance history, whereas RDF plants could tout better fuel, lower air emissions, and a more complementary fit with traditional recycling programs. Both could claim the banner of renewable energy production; volume reduction of up to 90%, and weight reduction of 70 to 80%.

At one point in the mid-80's, dozens of WTE plants were on the drawing boards in California alone as a cleaner, more elegant disposal option to the existing landfills. What made WTE doubly attractive was that the utilities were hungry for new sources of power and were offering long-term, guaranteed contracts at \$0.10/kWh or more for the electricity the WTE plants could produce from trash.

In the end, history will show that although over 150 plants were built in the U.S., only three were constructed in California: the Commerce plant (1,000 TPD, LA County Sanitation Districts); the Southeast Resource Recovery Facility or SERRF (2,240 TPD, LA County Sanitation Districts and the City of Long Beach); and Stanislaus County (1,700 TPD, Ogden Martin and Stanislaus County). All three are still operating.

According to the Integrated Waste Services Association, there are approximately 100 WTE plants burning MSW or RDF in the U.S. today. These plants combined combust roughly 15% of the total annual U.S. disposal tonnage, and generate 2,750 MW of power. Although plant upgrades, particularly in air pollution control, and expansions continue to occur, no new WTE plants have been built in over a decade.

As is often the case, several factors (whether perceived or actual) combined to bring the WTE revolution to a grinding halt across the U.S. in general and in California in particular:

- Growing public fears over toxic air emissions (dioxin, furans, heavy metals)
- Heightened concern over the environmental and public health impacts of the landfill disposal of the residual ash.
- A huge drop in energy revenues (roughly 50%) as the original utility contracts expired
- The birth of super-regional landfills that could attract waste from hundreds of miles away at prices below local WTE plants
- The passage of a Federal Law that declared "flow control" to be unconstitutional. Overnight, MSW that had been contracted to WTE facilities, and was needed to help repay the plant's debt, could be shipped to a competing landfill or any other facility.

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And like that, the 20-year run for WTE was essentially over. However, this was not the case in the rest of the world, most notably Europe and Japan, where the industry is still expanding, although in-roads are being made there as well by new “conversion technologies” such as anaerobic digestion and gasification.

In the City of Los Angeles, a similar trajectory occurred with the initial success of the Commerce and SERRF plants quickly dimmed by the failures of the Irwindale and LANCER (City of LA) projects to overcome public opposition and get off the drawing boards. By 1990, the light of WTE had been eclipsed in Los Angeles and all of California by a new star - Assembly Bill 939.

1990s: AB 939 and the MANDATE FOR 50% DIVERSION

Coinciding with the decline of the WTE era was the ascent of “diversion from landfilling” on a massive scale with the passage of the California Integrated Waste Management Act of 1989 (AB 939). The State began to march to the drumbeat of the three “R’s”: “Reduce, Reuse, and Recycle”. Among other things, the law mandated a 50% diversion level by the year 2000, as well as the creation of the various plans, programs and facilities that cities and counties throughout California would need to get there.

Helen of Troy may have had the face that launched a thousand ships, but AB 939 had the teeth that launched a thousand recycling programs, namely a \$10,000 a day fine provision, that while never strictly enforced, certainly got the message across from the CIWMB that this was serious business.

Fifteen years later, the State of California and the City of Los Angeles have made tremendous strides in diverting material from landfills, with the former at an official 42% diversion rate and the latter at 62%. According to the latest CIWMB data, the majority of cities in the State have achieved at least the 50% level.

In the City of Los Angeles, AB 939 compliance has been achieved through a combination of policies and programs overseen by the Bureau of Sanitation that include:

- Residential curbside recycling (starting with the yellow bin in 1990 and transitioning in 1997 to the current 3-barrel system for separate collection of trash, recyclables, and greenwaste)
- Greenwaste chipping, grinding and composting
- Construction and demolition debris (C&D) recycling
- AB 939 hauler franchise fees
- Multi-family and commercial waste pilot programs
- School curriculums about the environment and focused on recycling
- Rebate programs for haulers delivering material to certified MRF operations for sorting recyclables and select waste streams
- Recycled content procurement policies
- And others

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In 1994, the City Council of Los Angeles declared the goal of 70% diversion of MSW from landfills by the year 2010. In a similar vein, the City's Department of Water and Power (DWP) set a target renewable portfolio standard (RPS) of 13% renewable energy by 2010 and ultimately 20% by 2017, a whopping 1,000 MW of green power capacity. As detailed in the following chapters, conversion of MSW forms a nexus of both of these goals.

2000s: TARGETING ZERO (the rise of Conversion Technologies and the New Industrial Revolution)

The beginning of the 21st century has seen the dawning of a new paradigm in resource management that is reflected in the solid waste field by a "zero waste" philosophy. This philosophy is part of an over-arching movement called sustainability, in which the focus is placed on maximizing the beneficial use of our finite, and in many cases severely limited, natural resources.

Still a nascent movement, Zero Waste has been embraced by hundreds of jurisdictions as diverse as: the Country of New Zealand; Seattle, WA; Nelson, BC, Canada (pop. 15,000); San Francisco; and the California Integrated Waste Management Board.

In fact, the City's new diversion target of 70% is but one step on the Zero Waste path. The goal of the RENEW LA plan is to move beyond that 70% goal to a zero waste system as detailed in Section 4.

CONCLUSION

In looking back from where we've come, one can see a natural progression from the earliest sanitation services, to backyard incineration, through the automation of collection and the advent of sanitary landfills, the decade of WTE ascendancy, the maximization of traditional recycling under AB 939, and on to the beginning of the age of sustainability and Zero Waste.

Facets of all these technologies, programs, and policies will play a role in the RENEW LA strategy.

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