



2015
**Environmental
Report Card**
FOR LOS ANGELES COUNTY

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WASTE



Overview

Waste prevention and waste recovery are key strategies towards reducing resource consumption. Such reductions will have beneficial impacts on greenhouse gas emissions, toxic air emissions, habitat conservation, and water quality, locally, regionally and globally. There is a long history of State and City-level reduction efforts for municipal waste, an issue readily understood by residents as it is present in our daily lives.

Hazardous waste is less understood and mostly invisible to the average person, but the amount generated annually is equal to roughly 20% of the total annual municipal tonnage. State law requires industry to implement programmatic efforts toward hazardous waste reduction, but there are no quantitative targets.

Municipal Waste

Targets for municipal waste reduction for jurisdictions within LA County come primarily from the State, with the exception of a few ambitious city-level programs. In 1989, the Integrated Waste Management Act (AB939) established a 50% waste diversion from landfills requirement for jurisdictions in California on and after the year 2000. Subsequent legislation (SB1016) established a per capita disposal measurement system for the reporting year 2007 onward.

The per capita disposal target is the amount of waste disposal that is approximately equivalent to a 50% diversion rate. This is calculated based on a jurisdiction-specific (often city, county or special district) average of waste generation from the years 2003 to 2006 expressed in terms of per capita disposal. Compliance is determined annually by comparing each jurisdiction's per capita disposal rate with their individual target rate. Each jurisdiction has its own individual per capita disposal target, and jurisdictions are not compared to each other. Target rates are calculated using both population (number of residents) and employment (number of employees working in the jurisdiction). CalRecycle reviews the per resident disposal rate for most jurisdictions. If business is the dominant source of a jurisdiction's waste generation, however, CalRecycle may use the per employee disposal rate instead. SB 1016 also specified that the per capita disposal rate is just one of several factors in determining a jurisdiction's compliance with the intent of AB 939; CalRecycle's annual review assesses other aspects of a jurisdiction's programs through a review of information submitted with the Annual Report, site visits, and review of other data sources.

Additional efforts at both the State and local levels seek to increase diversion of solid waste beyond 50 percent. In October 2011, AB341 established a State policy goal that no less than 75% of solid waste generated must be source reduced, recycled, or composted by 2020. This is a statewide goal, and does not change the individual 50 percent diversion requirement for individual jurisdictions. However, some local jurisdictions have adopted their own policies, plans, or goals to achieve a higher diversion rate than 50%. For example, the City of Los Angeles has committed to reach zero waste goals (90% diversion) by 2025.

Data

We used two statistics generated from the CalRecycle reporting system:

- (1) The number of jurisdictions within LA County that did/did not meet their target per capita disposal rate^{43,44}.
- (2) The total annual tonnage of waste (disposed, transformed or used as alternative daily cover) at the County-level⁴⁵.

We also included data on the top ten jurisdictional disposal quantities in 2012, from the Countywide Integrated Waste Management Plan, 2012 Annual Report⁴⁶.

Findings

- Performance against per capita disposal rates has improved over the past 5 years (Table 29). No Los Angeles County jurisdiction appears to be exceeding its population-based per capita disposal target for the year 2013. Additional information related to program performance is being evaluated by CalRecycle staff as part of the Jurisdiction Review, which takes place every 2- to 4- years depending on the jurisdiction's previous review status.
- Total municipal waste generated by the County peaked in 2005, at close to 15 million tons, and has generally decreased since, with 2013 generation just under 9.5 million tons (Table 30, Figure 58). It is expected that economic conditions, as well as State-wide and city-level reduction policies and programs, have contributed to this improvement.
- However, waste tonnage has leveled off over the last 4 years with little improvement since 2010. The quantity of solid waste used for energy recovery has remained stable at approximately 535K tons per year, roughly 5.5% of annual waste generated. (Fig 58, Table 30)

Table 29: Performance of reporting jurisdictions against per capita disposal rates under SB1016 (2008-2013)

Year	2013	2012	2011	2010	2009	2008
Jurisdictions meeting all disposal targets	73	72	71	72	72	68
Not meeting population disposal targets	0	0	2 (Gardena and Maywood)	2 (Gardena and Maywood)	0	5 (Compton, Gardena, La Puente, Lawndale, Rolling Hills)
Not meeting employment disposal targets	0	1 (Rolling Hills) v	1 (Gardena)	2 (Bell, Gardena, Lawndale, Maywood)	2 (Maywood, Rolling Hills)	5 (Compton, Gardena, Lawndale, Maywood, Rolling Hills)
Total number reporting	73	73	73*	74	74	74

Figure 58: Total waste generated by Los Angeles County 1995-2013

Includes tons landfilled, transformed, and used as alternative daily cover. Does not include recycled wastes.

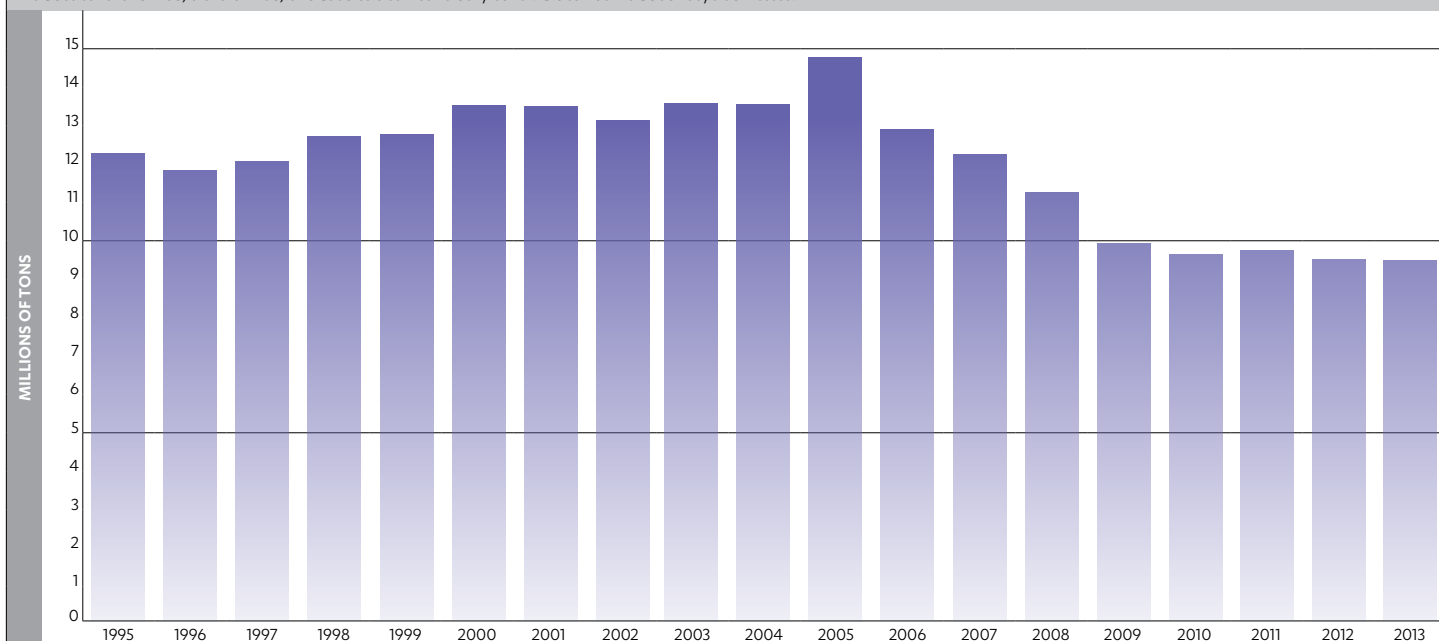
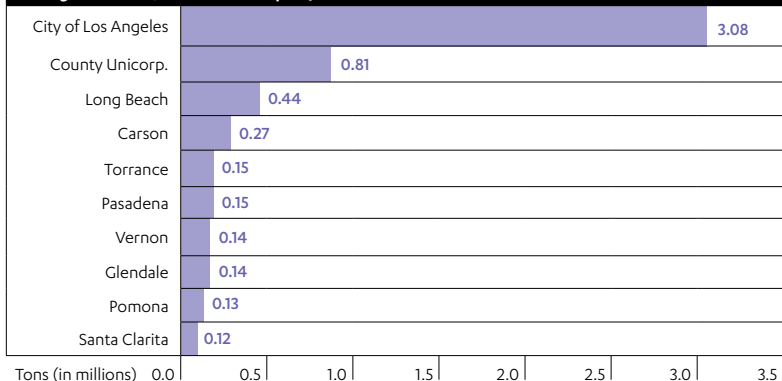


Figure 59: Top 10 Jurisdiction Disposal Quantities in 2012 (Source: LA County Integrated Waste Management Plan, 2012 Annual Report)



- The City of Los Angeles generates approximately 1/3 of all waste in the County (Fig 9).

Data Limitations

The current system of data collection and reporting for municipal waste is severely limited and does not provide information on the actual amount of waste “diverted” from landfills, nor on its ultimate disposition. CalRecycle information on status and trends of specific waste stream recycling programs are provided at the State level only; reports cannot currently be run by County or individual city. That means there are no publicly available centralized data for the quantities of bottles, cans, plastics by recycling code, or the weight of paper, metals, used motor oil, batteries, paint, green waste/composting streams and other materials recycled annually by county or city.

Table 30: Total waste generated by Los Angeles County 1995-2013

Includes tons landfilled, transformed, and used as alternative daily cover. Does not include recycled wastes.

Report Year	Total Tons	Breakdown of Tons		
		Disposal	Transformation	Total ADC
1995	12,277,948	11,517,810	510,063	250,076
1996	11,858,590	11,164,776	423,273	270,541
1997	12,082,135	11,284,766	425,315	372,054
1998	12,764,439	11,782,856	561,896	419,687
1999	12,795,109	11,676,104	575,841	543,164
2000	13,531,917	12,237,445	510,708	783,764
2001	13,513,259	12,263,807	547,610	701,842
2002	13,194,160	12,023,878	539,836	630,445
2003	13,590,484	12,312,500	539,561	738,422
2004	13,581,998	12,140,164	548,960	892,874
2005	14,863,566	13,227,651	536,476	1,099,439
2006	12,889,168	11,471,878	538,224	879,066
2007	12,284,886	10,944,053	521,894	818,939
2008	11,282,986	9,926,639	521,132	835,214
2009	9,917,322	8,688,818	546,571	681,933
2010	9,590,742	8,264,269	539,321	787,152
2011	9,776,656	8,233,623	525,143	1,017,890
2012	9,485,024	8,141,712	528,899	814,412
2013	9,476,309	8,266,415	534,456	675,438

Hazardous Waste

Similar to municipal waste, hazardous waste represents an under-utilized resource and indicates inefficiencies in industrial processes; however, the nature of this waste stream poses additional concerns for human health. By law, wastes must be handled as hazardous when they meet flammable, corrosive, reactive or toxic “characteristics”, or when they are generated through specific regulated processes⁴⁷.

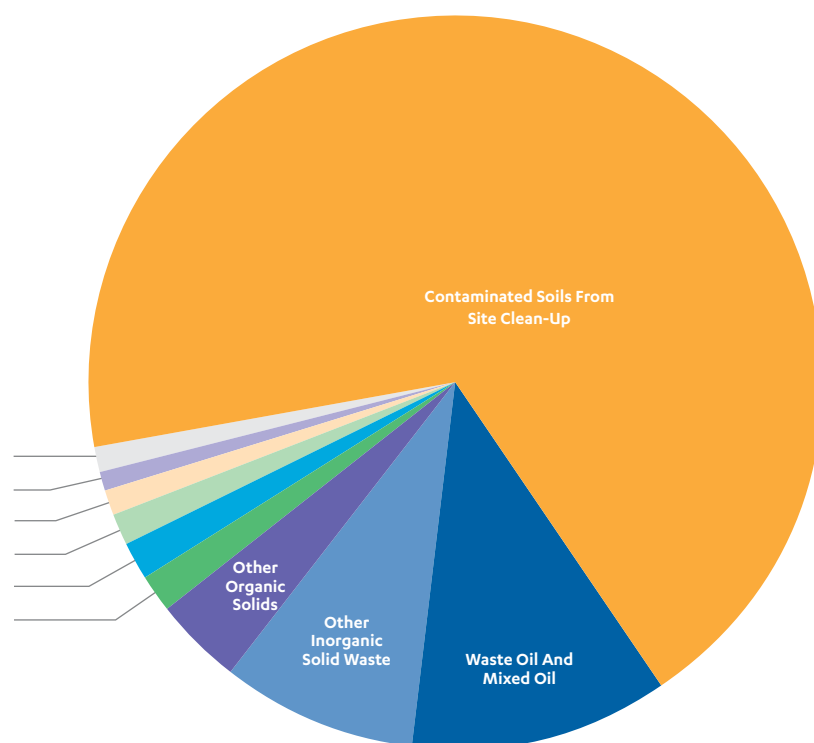
Table 31: Hazardous waste generation estimates based on DTSC and TRI data

Data Source	Est. total tons generated in 2013	Estimated number of generators
DTSC Report	2,193,184	21,000
TRI Report	1,240	126
TRI Report as a percentage of DTSC Report	0.06%	0.6%

Table 32: Amounts and waste code names for the top 10 categories comprising over 93% of all hazardous wastes generated in LA County in 2013 (Source: DTSC)

Waste Code Name	Tons	%
Polychlorinated Biphenyls & Matls W/Pcbs	18,032	0.9%
Unspecified Solvent Mixture	18,893	0.9%
Aqueous Solution (2 < Ph < 12.5) W Org Residues <=10%	20,773	1.0%
Unspecified Oil-Containing Waste	29,055	1.4%
Baghouse Waste	35,234	1.7%
Asbestos-Containing Waste	35,313	1.7%
Other Organic Solids	78,855	3.9%
Other Inorganic Solid Waste	173,772	8.5%
Waste Oil And Mixed Oil	237,794	11.6%
Contaminated Soils From Site Clean-Up	1,400,693	68.4%

2,048,415



Storage, transportation and disposal of hazardous wastes may cause exposure of workers and communities to toxic substances through air emissions, leakage into groundwater or surface water, or dermal contact with contaminated materials. Although these risks are similar to those posed by hazardous materials in general, most hazardous wastes have little or no value within manufacturing or retail process chains and therefore require detailed and strict regulatory oversight to ensure proper management and disposal. California has an extensive regulatory system that imposes requirements above and beyond those established by Federal regulations.

Data

We generated reports using the California Department of Toxic Substances Control (DTSC) database for total hazardous wastes generated⁴⁸, as well as from EPA’s Toxic Release Inventory (TRI) database on hazardous waste transfers⁴⁹. These two data sources provide somewhat complementary information on the amounts and types of hazardous waste generated. DTSC provides the most complete picture of waste amounts and the processes that generate the waste (through “waste code names”), while the TRI report provides details of the chemical composition of wastes for large industrial facilities required to report to the TRI Program.

Findings

- According to DTSC records, the total amount of hazardous waste generated in LA County in 2013 was ~2.2 million tons, although this number “double counts” wastes that were sent to a transfer station before being transported again to final treatment or disposal. The total amount of waste reported through TRI in LA County was ~2.48 million pounds, or 1,240 tons, which is three orders of magnitude less than reported through DTSC (Table 31).
- Only 126 facilities in the County reported hazardous waste transfers in their TRI reports in 2013. The DTSC public report website only provides information on

Table 33: Total hazardous waste tonnage and total excluding site clean-up soils (2010-2013). Source: DTSC

Year	2010	2011	2012	2013
Total tons	856,531	842,590	2,653,707	2,193,184
Total tons excluding site cleanup soils	701,769	741,490	1,834,399	792,491

Fig. 60: Total hazardous waste tonnage and total excluding site clean-up soils (2010-2013). Source: DTSC

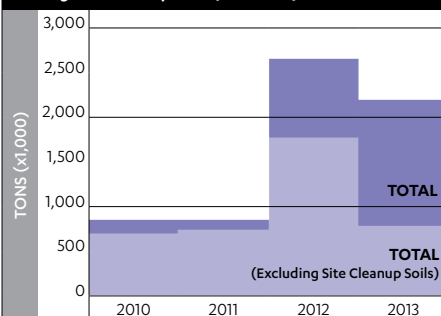


Table 34: Waste Amounts of Top 10 Generators in 2013 Source: DTSC

Facility Name	City	Tons
Pechiney Cast Plate	Vernon	1,383,156
Asbury Environmental Services	Compton	148,642
Veolia ES Technical Solutions LLC	Azusa	33,206
Exide Technologies Inc	Vernon	26,217
Agritec Int DBA Cleantech Environ. Inc	Irwindale	22,325
Chevron El Segundo Refinery	El Segundo	21,378
Quemetco Inc	City of Industry	19,671
Rho-Chem LLC	Inglewood	19,282
Light Metals Inc	City of Industry	17,396
Clean Harbors Wilmington LLC	Wilmington	14,916
78% of total		1,706,190

Table 35: Top Five Generators of TRI-Reported Haz. Waste, Accounting for 78% of Total 2013 Tons

Facility Name	Tons
Quemetco Inc	630
Chevron Products Co Div Of Chevron Usa Inc	102
Siemens Water Technologies Llc	85
Exide Technologies	77
Valmont Coatings Calwest Galvanizing	75
	969

the number of generators with annual tonnage >1,000 (those high volume generators alone included 81 individual generators in the County), so we could not obtain an exact total number of individual generators active in Los Angeles County in 2013. However, a rough estimate is 21,000 (pers. comm. w/DTSC staff). TRI-reporting facilities therefore represent less than one percent of total hazardous waste generators in the County (Table 31).

- Over 93% of the total volume of hazardous wastes generated in the County are accounted for in just 10 out of 76 waste code categories; contaminated soils from site cleanup comprised the overwhelming majority: 64% (Table 32).
- A review of three years of DTSC data previous to 2013 showed a significant increase in total hazardous waste generated in the County in 2012 and 2013 compared to 2010 and 2011 – nearly 3-fold (Table 33 and Figure 60). Because year-to-year amounts can be strongly influenced by site-specific clean-up activities, we also looked at yearly totals excluding contaminated soils from site clean-up. With this adjustment, volumes across 2010, 2011 and 2013 looked more consistent, albeit with an increasing trend. The spike in tonnage in 2012

Table 36: Top 15 Chemicals Comprising >96% of All Haz Wastes Transferred in 2013 by Facilities Reporting Under TRI

Chemical Name	Tons
Lead Compounds	495
Zinc Compounds	212
Arsenic Compounds	93
Antimony Compounds	85
Chromium Compounds	59
Nickel Compounds	57
Nitric Acid	42
Nitrate Compounds	31
4,4'-Isopropylidenediphenol	29
Chromium	27
Acetonitrile	14
Methanol	11
Copper	11
Copper Compounds	10
Cyanide Compounds	10
	1,187

may be associated with other one time or infrequent events such as periodic maintenance work / turnarounds at major facilities. Overall trends also may be related to production changes influenced by global economic conditions.

- The top 10 waste generators for 2013 represent 78% of the total hazardous waste generated in the year per DTSC data (Table 34). While some of these companies are individual facilities (the now-closed Pechiney Cast Plate generated approximately 60% of total waste generated as a result of site cleanup), others provide recycling or clean-up services that involve managing wastes from multiple sites.
- The top five generators under the TRI program accounted for 78% of the total (Table 35).
- The Exide Technologies facility in Vernon and the Quemetco facility in the City of Industry (both lead acid battery recyclers) were within the top seven generators for both DTSC regulated wastes and TRI-reported wastes. (Tables 34 & 35) Quemetco alone generated approximately half of the TRI reported hazardous waste in 2013. As stated earlier, Exide is now permanently closed which will reduce countywide hazardous waste tonnage.
- Fifteen chemicals (out of 59 reported under TRI) account for 96% of the hazardous waste transfers reported in 2013 (Table 36). Lead compounds comprise over 40% of the total.

Data Limitations

- There are two significant issues with the waste generation data that make it challenging to present an accurate picture. First, numbers shown in the DTSC reports, either as total tonnage for the County or by waste code type, are an overestimate of amounts generated because these reports draw on transportation records, and therefore wastes are counted twice if a given load is shipped from a generator to a transfer station and then again to a treatment

facility (a common occurrence).
Second, only a very small percentage of the total waste generated is reported through the TRI Program⁵¹, and only for wastes containing TRI-specific chemicals (a much smaller universe than DTSC regulated wastes); therefore, a detailed chemical composition is not readily available for the vast majority of generated wastes.

- More broadly, we were only able to obtain waste generation volumes readily from the DTSC and TRI databases. County-specific data to support an assessment of waste minimization efforts or of disposal, recycling and transportation compliance performance did not appear to be available.





Grade for Waste = B/Incomplete

Thanks to AB 939, and subsequent regulations, and numerous recycling and source reduction programs, all cities in LA County have successful solid waste diversion programs as required by CalRecycle. However, due to limitations in data collection, there are not reliable data on solid waste recycling programs or even the actual quantities of waste generated and diverted from landfills. With the advent of a city-wide exclusive franchise system for municipal solid waste, Los Angeles has the opportunity to require more complete collection, diversion, and recycling data from their contracted waste management companies. For hazardous waste generation in the region, volumes are extremely high, but that's not surprising from a region as populous and industrialized as Los Angeles County. A more precise analysis is hampered by limitations in data availability; in addition to questions related to volumes and chemical constituents, an evaluation of waste minimization efforts and regulatory compliance was not possible due to lack of readily available information.

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