

Processing Fee Cost Survey Results

The processing fee cost survey was performed under contract by Crowe LLP (Crowe), for the California Department of Resources Recycling and Recovery (CalRecycle). Cost per ton results from the survey will be used by CalRecycle for the processing fee calculation, effective January 1, 2020. **Exhibit 1** provides the 2018 statewide recycler cost per ton results to recycle aluminum, bi-metal, glass, and plastic (for seven different resin types) beverage containers.

Exhibit 1
2018 Statewide Processing Fee Recycler Cost per ton, by Material Type^a

Material Type	Cost per Ton
1. Aluminum	\$626.61
3. PET #1	502.44
5. Bi-Metal	1,056.35
7. LDPE #4	1,880.50
9. PS #6	1,044.99

^a Without reasonable financial return (RFR).

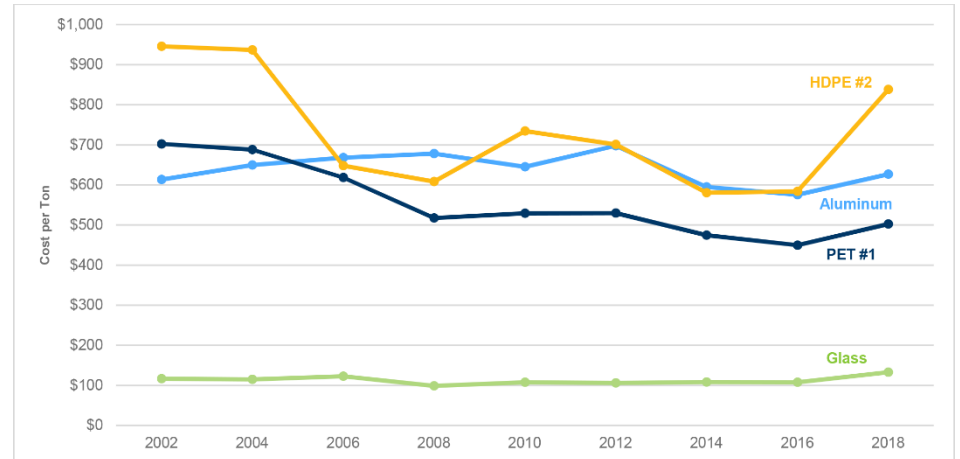
Cost Survey Methodology

Crowe followed processing fee cost survey procedures consistent with the eight prior cost surveys. The Crowe team completed 154 recycler cost surveys during April 2019 through October 2019 to obtain these cost survey results.

Recycler center (RC) costs were surveyed using RC calendar year 2018 financial statements. RC costs measured by this survey will be used by the processing payment calculation as follows:

$$\text{Processing Payment} = \frac{\text{Cost per Ton to Recycle} \times (1 + \text{Reasonable Financial Return}) - \text{Scrap Revenue per Ton}}{\text{per Ton}}$$

Exhibit 2
Summary Comparison of Cost Survey Results, CPI Adjusted, for Processing Fee Recyclers



Historical Cost Per Ton Results Adjusted by Inflation

Exhibit 2 compares 2018 costs per ton results to costs per ton results, adjusted by inflation, from the prior eight surveys.¹

Cost Per Ton Increase Factors

Overall, the change in cost per ton between 2016 and 2018 was significant. Between 2016 and 2018 there was a reduction in the overall survey population of PF recycling centers, and a decrease in the total tons of CRV material recycled. This combination alone could suggest an increase in cost per ton between 2016 and 2018. **Exhibit 3** provides an overview of selected factors that help explain relative increases in cost per ton.

Cost Category Comparison

Exhibit 4 provides a comparison of the 2018 average category costs per RC, the percent of CRV costs by category for 2018, the 2016 average category costs per RC, the percent of CRV costs by category for 2016, and CPI adjusted 2016 category costs per RC, and the percent change between the 2018 and CPI adjusted 2018 category costs. The CPI adjustment between 2016 and 2018 was 6.7 percent.¹

Exhibit 3
Selected Key Factors

CRV Wages

Higher average CRV hourly wages, reflective in part of increases in California and Los Angeles County minimum wage between 2016 and 2018.

Number of Low Wage Recyclers

A reduction in the number of surveyed recycling centers with average hourly wages below minimum wage, potentially due to ongoing recycling center closures.

Transportation Costs

Increased transportation costs between 2016 and 2018 driven in large part by increased fuel prices between 2016 and 2018.

Very High Volume, Low Cost Recyclers

By random selection, there were fewer very high-volume and low-cost RCs selected for the survey in 2018.

HDPE Costs

The survey population volume and average tons of HDPE per site declined, and percent of Non-CRV HDPE increased, as compared to 2016, all upward factors on cost per ton.

Inflation

Factoring in cost of living increases, the Consumer Price Index (CPI) increased 6.7 percent between 2016 and 2018, likely accounting for a portion of the cost per ton increases.

¹ U.S. Department of Labor, Bureau of Labor Statistics, West Urban Consumer Price Index: <http://www.dof.ca.gov/Forecasting/Economics/Indicators/Inflation/>



The data reflects an average category cost per RC for the 143 RCs surveyed for the 2016 PF Cost Survey and the 154 RCs surveyed for the 2018 cost survey. Below are highlights:

- Average CRV costs per RC increased by over one-third (36%) between 2016 and 2018
- The percent of CRV costs, by category, did not change significantly between 2016 and 2018. For example, direct labor represented 51.9 percent of CRV costs in 2018 and 50.1 percent in 2016.
- The cost categories with the greatest dollar increase between 2016 (adjusted) and 2018, accounting for 95 percent of the increase, were:
 - Direct labor
 - General business overhead
 - Transportation
 - Rent
 - Maintenance

Changes in Labor Costs

CRV hourly wages increased 17 percent between 2016 and 2018. If we consider that California minimum wage increased 10 percent between 2016 and 2018, and CPI could account for a 6.7 percent increase, the 17 percent is consistent. **Exhibit 5** compares overall CRV wages and overall CRV wages in Los Angeles (LA) County.

Changes in Transportation Costs

CRV transportation costs were analyzed to gain a better understanding of how transportation impacted the increase in cost per ton between 2016 to 2018. **Exhibit 6** shows a comparison between 2016 and 2018 for transportation cost per ton for aluminum, glass, and plastic. Transportation cost per ton was calculated by taking the sum of transportation and fuel costs divided by the total tons for each material. The results show that transportation cost per ton for all materials increased, with glass experiencing the largest change with a 67 percent increase, while aluminum and plastic increased roughly 30 percent.

Exhibit 4
Comparison of Average Surveyed Processing Fee Recycler Category Costs

Cost Category	2018 (n=154)	% of CRV Costs	2016 (n=143)	% of CRV Costs	CPI Adjusted 2016	% Change 2016 (adj.) to 2018
Direct Labor	\$134,989	51.9%	\$90,265	50.1%	\$96,349	40%
Indirect Labor	\$20,745	8.0%	\$19,184	10.7%	\$20,477	1%
General Business Overhead	\$18,248	7.0%	\$9,741	5.4%	\$10,398	76%
Transportation	\$17,171	6.6%	\$8,993	5.0%	\$9,599	79%
Rent	\$27,634	10.6%	\$20,826	11.6%	\$22,230	24%
Depreciation	\$4,931	1.9%	\$4,902	2.7%	\$5,232	-6%
Property Tax	\$1,220	0.5%	\$988	0.5%	\$1,055	16%
Utilities	\$7,734	3.0%	\$6,169	3.4%	\$6,585	17%
Supplies	\$6,365	2.4%	\$5,822	3.2%	\$6,214	2%
Fuel	\$2,027	0.8%	\$2,157	1.2%	\$2,302	-12%
Insurance	\$5,530	2.1%	\$4,023	2.2%	\$4,294	29%
Interest	\$1,388	0.5%	\$567	0.3%	\$605	129%
Maintenance	\$11,902	4.6%	\$6,411	3.6%	\$6,843	74%
Total CRV Costs per Surveyed Site	\$259,884	100.0%	\$180,048	100.0%	\$192,183	35%

Exhibit 5
Comparison of CRV Overall Wages and LA County CRV Overall Wages

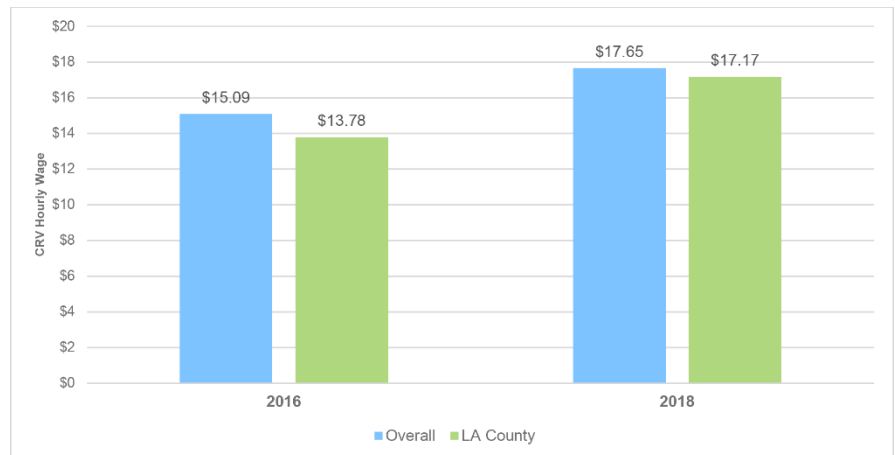


Exhibit 6
2016 vs 2018 – Aluminum, Glass, and Plastic Transportation Cost Per Ton

