
Chapter 4

Costs and Revenues

Costs of Recycling Programs

Revenues of Recycling Programs

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Cost/Revenue Comparison

The Arizona Solid Waste Recycling Statute (A.R.S. §49-832.C.4.) requires that the following information be reported annually:

- A. The costs of operating and maintaining recycling programs.
- B. The revenues from the sale or use of recycled materials for existing programs.
- C. The costs avoided in processing or disposal.

An analysis of the cost and revenue data reported by government jurisdictions can provide a general idea of the financial aspects of recycling programs in operation around the state. At the time of publication, 18 jurisdictions provided information regarding costs and revenues. There are insufficient data to provide a complete analysis of this issue. The challenges and issues regarding costs and revenues for recycling programs vary greatly, therefore, jurisdictions should not be directly compared. Table II.3 provides the information reported by jurisdictions.

Costs of Recycling Programs

The cost of operating and maintaining each recycling program is identified in response to the Arizona Recycling Program's annual questionnaire. These costs include, when applicable: land, insurance, equipment, personnel, overhead, consultants, construction, additional procurement programs (purchasing recycled-content materials) and other related costs. Some jurisdictions indicated that the costs reflect several different types of recycling programs, while others stated that costs reflect a specific type of recycling program, such as funding a household hazardous waste event. Also, a jurisdiction's operational expenses may change significantly from year to year due to the purchase of capital equipment.

The data from juris-

Table II.3. Costs, Revenues and Avoided Costs of Operating a Recycling Program in Arizona

Only cities that reported data are included in this table. Jurisdictions should not be directly compared due to differences in what each considers costs and revenues.

Jurisdiction	Population	Operational Costs	Revenues	Avoided Costs
Bisbee	N/L*	\$25,370	N/L	N/L
Chandler	N/L	N/L	\$14,300	\$284,433
Coolidge	7,100	N/L	\$377	N/L
Cottonwood	8845	\$14,777	N/L	N/L
Flagstaff	58,000	\$1,149,701	\$793,458	N/L
Florence	N/L	N/L	\$352	\$5,500
Graham County	31,150	\$36,129	N/L	N/L
Guadalupe	5500	\$100	\$400	\$2,000
Holbrook	N/L	N/L	\$27,900	N/L
Jerome	500	\$12,500	\$450	\$1,640
Kearny	2520	\$133	\$0	\$0
La Paz County	19,000	\$5,910	N/L	N/L
Mesa	410,000	\$3,364,656	\$174,876	\$583,707
Phoenix	1,240,000	\$5,291,000	\$6,854,420	\$1,521,180
Sierra Vista	39,900	\$50,454	\$17,062	\$110,388
Tucson	482,932	\$1,716,618	\$120,297	\$353,934
Wickenburg	N/L	\$48,000	N/L	N/L
Yavapai County	155,900	\$55,812	\$12,000	\$13,700
Total		\$11,771,160	\$8,015,893	\$2,876,482

* N/L means the information was not listed in the report.

The greatest amount of revenues reported was \$6,854,420 from the city of Phoenix; showing a profit of more than \$1.5 million. The least amount of revenues reported by those jurisdictions responding was \$352 by the Town of Florence. The total revenues generated statewide, based on the 18 reporting jurisdictions, was \$8,015,892.50.

dictions who reported this information show that costs ranged from as low as \$100 per year for the town of Guadalupe, to as high as \$5,291,000 for the city of Phoenix. The city of Mesa expended \$3,364,656 in operating costs during FY 2000, and the city of Tucson expended \$1,716,618.

Revenues of Recycling Programs

Funds from the resale of a usable item or the sale of a recyclable item qualify as revenues of recycling programs. The greatest amount of revenues reported was \$6,854,420 from the city of Phoenix; showing a profit of more than \$1.5 million. The least amount of revenues reported by those jurisdictions responding was \$352 by the town of Florence. The total revenues generated statewide, based on the 18 reporting

jurisdictions, was \$8,015,892.50.

Avoided Costs Due to Recycling Programs

Avoided costs are neither revenues nor funds received, but cost savings by diverting solid waste from the landfills. These avoided costs should be considered when evaluating the cost effectiveness of a recycling program. Avoided costs represent what would be paid to landfill, incinerate, or otherwise legally dispose of the solid waste. Typically, this estimate is based on the disposal, or tipping fees, that would have been charged had the solid waste been landfilled, but many include other landfill operation costs. For example, landfill operation cost avoidance can reflect the reduction of maintenance on landfill equipment, due to the diversion of such items as scrap metal. It is also important to consider the costs avoided for siting and constructing a new landfill due to the landfill space saved by waste diversion.

A total of \$2,876,483 was realized as avoided costs by those jurisdictions that reported such costs this fiscal year. The avoided costs ranged from \$1,640 for the town of Jerome to \$1,521,180 for the city of Phoenix.

Cost/Revenue Comparison

There are many challenges when comparing the costs and revenues of recycling programs. Each jurisdiction does not offer the exact same combination of recycling programs nor financing methods for programs. Jurisdictions range from offering a variety of recycling programs to only one program. The types of recycling programs offered range from: curbside to drop-off collection, household hazardous waste collection year-round to individual events, greenwaste drop-off to a curbside collection, and Christmas Treecycling to white goods collection. The costs associated with each jurisdiction's recycling program may represent several programs or just one.

Some jurisdictions indicated that recycling program funding is mixed with other solid waste programs, and thus, cannot be identified specifically as recycling costs. Furthermore, debate exists regarding financial issues within the recycling and solid waste industry, due to the range of definitions of revenues, avoided costs, and operational

costs. Some jurisdictions have a contract with private recycling companies to collect, sort, and broker the material. As a result, these jurisdictions are not privy to financial information. The financial figures of the private companies may not be represented in this report. Other jurisdictions may operate a recycling program as well as a landfill. In such a scenario, the avoided costs of paying tipping fees for recycled material that was diverted from the landfill may be viewed as a loss of revenues for the landfill operation and may not be reported. The costs and revenues comparison is only an approximate analysis due to the difficulty in achieving consistent statewide definitions of a recycling budget and types of programs offered. Each jurisdiction should be evaluated separately.

The costs and revenues comparison only addresses the financial aspects of recycling. There are also indirect savings and relative benefits that are difficult for individual jurisdictions to quantify in dollars, but should be considered in overall program evaluations. These include resource conservation, energy savings, and a reduction in pollution.

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