

G Monitoring and Evaluation

Use this worksheet to analyze your waste reduction program once it has been fully implemented and in place long enough to be evaluated.

Program monitoring and evaluation is a critical element of any waste reduction program. This worksheet will help you gauge the effectiveness of your waste reduction program by estimating 1) how much waste your company is reducing, 2) avoided waste removal costs, 3) avoided purchasing costs, and 4) revenues.

Be aware, however, that this worksheet does not calculate *net costs* or savings of the program. To do this, you would need to consider any capital and operating expenses incurred as a result of the program, as listed in Worksheet F. Now might be a good time to revisit that worksheet.

Also, factors other than your program could be affecting the amount of waste your company is generating, its waste removal and purchase costs, and any savings being realized. Consider if any extenuating factors (such as a reduction in your workforce) are contributing to these measures of success.

Finally, keep in mind that costs are not the sole indicator of a program's success. Be sure to consider the intangible benefits of waste reduction, such as improved corporate image and employee morale, when ascertaining the success of your program.

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Name of Reviewer:	Date of Review:
Building:	Department:
Name of Contract:	Telephone Number:

1 Amount of Waste Reduced

Use the following tables to quantify the annual amount of waste that is being reduced as a result of your company's waste reduction efforts. When recording the amount of waste prevented, use whatever time period (e.g., weeks or months) is easiest for you to measure. Multiply these figures by the appropriate annual multiplier to come up with an estimate of the amount of waste reduced per year. Then, in the last column of each table, convert this amount to either weight or volume. (if you are charged for waste removal based on weight, convert the amount of waste reduced to tons. If you are charged for waste removal by volume or per pull, convert this amount to cubic yards).

A Waste Prevention

Activity	Type of Waste Prevented	Amount of Waste Prevented (units/time period)	Annual Amount of Waste Prevented X Annual Multiplier =	Conversion to Tons or Cubic Yards*
<i>Double-sided copying</i>	<i>White office paper</i>	<i>12 reams per week</i>	<i>624 reams per year</i>	<i>21 cubic yards per year</i>
<i>Donate wooden pallets</i>	<i>Pallets</i>	<i>10 pallets per week</i>	<i>520 pallets per year</i>	<i>10.4 tons per year</i>
Total				

• See Appendix D for conversion tables.

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B. Recycling

Material	Amount of Waste Collected (units/time period)	Annual Amount of Waste Collected	Conversion to Tons or Cubic Yards*
<i>HDPE plastic</i>	<i>40 pounds per week</i>	<i>2,080 pounds per year</i>	<i>1.04 tons</i>
Total			

C. Composting

Material	Location of Composting	Estimated Amount of Waste Reduced	Annual Amount of Waste Reduced	Conversion to Tons or Cubic Yards
<i>Cafeteria food scraps</i>	<i>On site</i>	<i>250 pounds per week</i>	<i>13,000 pounds per year</i>	<i>6.5 tons</i>
Total				

D. Total Amount of Waste Reduced

Use the formula below to calculate the total annual amount of waste reduced (in tons or cubic yards).

$$\begin{array}{r}
 \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \boxed{\hspace{2cm}} \\
 \text{Total annual amount of} \quad \text{Total annual amount} \quad \text{Total annual amount} \quad \text{Total Annual Amount} \\
 \text{waste prevented} \quad \text{of waste recycled} \quad \text{of waste composted} \quad \text{of Waste Reduced} \\
 \text{[from Step 1-A]} \quad \text{[from Step 1-B]} \quad \text{[from Step 1-C]}
 \end{array}$$

• See Appendix D for conversion tables.

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2 Avoided Waste Removal Costs

Avoided waste removal costs will be calculated differently, depending on how your company is charged for waste hauling. Companies may be charged by weight (2-A), volume (2-B), container pull (2C), or a combination (2-D) of these. Complete as many of the following tables as appropriate for your company's waste hauler billing system(s).

A. Avoided Waste Removal Costs (if charged by weight)

Activity	Total Annual Amount of Waste Reduced (in tons) <i>[from Worksheet G-1]</i>	Waste Removal Cost (per ton) <i>[from Worksheet B-2]</i>	Annual Avoided Removal Costs
		X	=
Waste Prevention			
Recycling			
composting			
Total			

B. Avoided Waste Removal Costs (If charge by volume)

Activity	Total Annual Amount of Waste Reduced (in cubic yards) <i>[from Worksheet G-1]</i>	Waste Removal Cost (per cubic yard) <i>[from Worksheet B-2]</i>	Annual Avoided Removal Costs
		X	=
Waste Prevention			
Recycling			
composting			
Total			

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C. Avoided Waste Removal Cost *(if charge by container pull)*

If your facility is charged by container pull, use the following table to show how many fewer pulls could have resulted from your waste reduction activities.

Activity	Total Annual Amount of Waste Reduced (in cubic yards) [from Worksheet G-1]	Volume of Hauling Container	Container Pull Avoided	Cost per Pull (in dollars) [from Worksheet B-2]	Annual Avoided Waste Removal Costs
	÷		=		×
			=		=
Waste Prevention					
Recycling					
Composting					
Total					

D. Total Avoided Waste Removal Costs

If your company is charged in a combination of ways for waste removal services, and you have filled out two or more of the above tables, use the following formula to calculate your total avoided removal costs.

	+		+		=	\$
Total Annual Avoided Waste Removal Costs						
<i>[from 2-C]</i>						

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3 Revenues and Avoided Purchase Costs

A. Revenues

Use the following table to calculate the revenues received from collected recyclable or exchanged materials,

Activity	Amount Collected per Time Period	Annual Amount Collected	Unit Price	Estimated Annual Revenue
	x Annual Multiplier =		x	=
<i>Glass recycling</i>	<i>55 pounds per week</i>	<i>2,880 pounds per year</i>	<i>\$0.08 per pound</i>	<i>\$229</i>
Total				

If your company receives additional revenues from other measures such as materials exchanges or the sale of compost, use the formula below to calculate total annual revenues from your waste reduction program.

$$\text{Revenues from recycling} + \text{Revenues from materials exchanges, compost sales, etc.} = \$ \text{Total Annual Revenues}$$

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B. Avoided Purchase Costs

Use the following table to calculate the annual savings from avoided purchase costs resulting from all waste reduction activities (waste prevention, composting, recycling, materials exchange).

Activity	Material	Amount of Material Not Purchased per Time Period	Unit Price	Total Avoided Purchase Cost	Annual Avoided Purchase Cost
		X		=	X Annual Multiplier =
<i>Double-sided copying</i>	<i>White office paper</i>	<i>12 reams per week</i>	<i>\$3 per ream</i>	<i>\$36 per week</i>	<i>\$1,872</i>
Total					



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6 Other Factors

Consider other significant factors that may have influenced any changes in cost or savings. For example, did your number of employees increase or decrease?

7 Summary

Summarize the success of your waste reduction program and describe any drawbacks. Indicate ways to address these drawbacks.
