

Sample Environmental Opportunity Evaluation

Y.O.U.R. Company

Environmental Opportunity:



Y.O.U.R. INC.

Reduce water use in the main

office building by replacing existing 3.5 gallon per flush toilets with water-efficient ultra-low-flow models.

Baseline Costs:

The following information was collected during the initial environmental assessment for the current main office building restrooms:

10 toilets, 3.5 gal/flush = 1,400 gal/day (gpd) or 511,000 gal/yr

Water rate: \$2.50 per 1000 gallons, Sewer rate: \$4.25 /1000 gal

Annual Operating Cost:

Water: 2.50 x 511 = \$1,277.50

Sewer: 4.25 x 511 = \$2,171.75

Maintenance: = \$2,500.00

Total: = \$5,949.25

Alternative Costs:

10 toilets, each using 1.6 gal/flush = 640 gpd or 233,600 gal/yr

Water rate, sewer rate remain constant

Annual Operating Cost:

Water: 2.50 x 233.6 = \$584.00

Sewer: 4.25 x 233.6 = \$992.80

Maintenance: = \$2,500.00

Total: = \$4,076.80

Annual Savings: = \$1,872.45

Capital Investment Cost: (includes installation)

10 1.6-gpf toilets = \$4,500

Simple Payback Period Calculation: (no interest/depreciation)

Cost of installation ÷ savings per year = 4,500/1,872.45 = 2.4 yrs

Recommendation:

This environmental opportunity will be profitable within 3 years. For each of the remaining 7 years of the toilets' expected 10yr life, we will reduce annual expenses by approximately \$1,872.45.

Next steps to increase your profitability through environmental practices...

Online Resources:

Environmentally Preferable Purchasing: www.sonomabea.org

EPA Guide to Environmental Cost Accounting:

www.epa.gov/opptintr/acctg/resources.htm

Look in the BEA's How-To Guide Series for:

#1: Developing an Environmental Policy Statement

#2: Carrying Out an Environmental Assessment

#3: Setting Environmental Goals and Objectives

#4: Accessing Environmental Resources (Two Parts)

#5: Educating Your Employees About Sound Environmental Practices

#7: Measuring Performance

#8: Developing Continual Action Plans

Disclaimer: The information in this brochure is presented for the convenience of the reader. The information provided here is not intended to replace an EMS strategy and should not be used as the sole source for environmental strategies.



Business Environmental Alliance
401 College Avenue, Suite D
Santa Rosa, CA 95401
Phone: 707.565.7257
Fax: 707.565.7231
Email: bea@sonoma-county.org
Web: www.sonoma-county.org/bea

BEA How-To Guide #6:

Evaluating Profitable Environmental Opportunities



Photo by: Susan & Neil Silverman, Sonoma County, CA



"profitability through sound environmental practices"

Sonoma County
Business Environmental Alliance

What are environmental opportunities?

Environmental opportunities are potential changes in the materials or practices used at your business that would reduce harmful impacts on the environmental and/or have environmental benefits. These opportunities might stem from areas of improvement discussed in your goals and objectives, or might be identified during an initial environmental assessment. On the other hand, an opportunity might arise because of a new technology, government initiative, community project, or your employees' suggestions. With many potential sources of environmental opportunities, business leaders must learn to evaluate which will both achieve their environmental goals and be profitable.



How will evaluating environmental opportunities increase my profitability?

Taking steps to improve your environmental performance for its own sake is admirable. But businesses realize that carefully evaluating each step's costs and benefits will lead to more value in the end. By using the techniques described here to make sound judgments, your business will ensure that the changes it makes to improve the environment will also improve the bottom line. In addition, the process of evaluating these opportunities reinforces your commitment to sound environmental practices and allows you to make more informed explanations of your choices to interested stakeholders.



Who should be involved in evaluating environmental opportunities?

Staff members that are comfortable with your organization's accounting methods and financial system, as well as the general operations of the facility, will be most helpful in evaluating environmental opportunities. For very specialized projects, employees familiar with the technology or procedure involved should be included in the evaluation as well.



How do I get started?

First, gather information about the materials and procedures that currently create environmental impacts. These will likely be addressed in your environmental goals, and descriptive information should be available from a recent environmental assessment.

Second, determine whether the proposed alternatives would meet basic quality standards and produce an acceptable end result before making the effort to evaluate their profitability.

How do I analyze the costs associated with an environmental opportunity?

Baseline Costs

Compute the costs associated with your current materials and procedures. These will provide the baseline to which you can compare more environmentally friendly opportunities. The costs you include in this baseline calculation should reflect the level of detail you want in your final analysis. Costs to consider for a particular area where environmentally preferable alternatives exist include:

- ✓ **Raw materials and/or supplies:** the direct cost of the supplies/raw materials that are used in the current process
- ✓ **Capital costs:** the equipment used in a particular process and the share of overall capital costs (for building space, etc.) attributable to the process. *Note: if some of the capital costs will remain constant for any set of alternative materials/practices, they can be excluded from the cost calculation. However, their inclusion allows for a fuller accounting of the economic value of your processes.*
- ✓ **Labor:** the costs for the current number of worker-hours spent on a process, and/or additional costs such as insurance that are related to the process
- ✓ **Waste disposal:** the cost of removing any wastes produced
- ✓ **Utilities:** the cost of energy and water used in the process
- ✓ **Miscellaneous:** other costs include permits, environmental mitigation, maintenance costs not already included in materials or labor, employee training, and any other components of overhead that can be traced to the process being evaluated



Alternative Costs

Compute the costs associated with the environmentally preferable alternatives for each of the categories in your baseline calculation. Then, include additional costs such as:

- ✓ **Capital investment:** if new equipment is needed for this alternative, include the cost of the investment
- ✓ **Installation:** costs for removing old equipment/materials and installing new equipment/materials
- ✓ **Planning/Training:** any costs associated with preparing your site/employees for a new process

How do I analyze the benefits associated with an environmental opportunity?

The benefits of an environmentally preferable alternative may be immediately evident from your cost calculations, as a direct savings in annual operating costs.

★ *Savings Calculation: baseline annual operating cost minus alternative's projected annual operating cost*

Additional types of benefits to include in your evaluation might be the values of increasing productivity, reducing liability, and reducing the number of applicable regulations.

How do I evaluate the profitability of an environmental opportunity?

Two calculations will help you compare the environmental opportunity with your current practices:

Benefit-Cost Ratio:

As with any business decision, an environmental opportunity will be profitable if it produces a benefit/cost ratio greater than one. Now that you have determined how to identify the economic benefits (savings and additional benefits), compare them to the costs of the opportunity over a specified time period such as the expected life of the alternative.

★ *Benefit-Cost Ratio Calculation:*

$$\frac{\text{Savings or benefits for specified time period}}{\text{Costs for that period}}$$

Payback Period:

Particularly for long-term projects, it may be more useful to calculate the amount of time necessary for a project's benefits to outweigh its initial costs and become profitable.

★ *Simple Payback Period Calculation:* $\frac{\text{Total cost for life of project}}{\text{Savings or benefits per year}}$

Environmental Opportunities Checklist

- We have calculated the costs associated with our current practices.
- We have calculated the costs associated with each of the environmentally preferable alternatives under evaluation.
- We have identified additional benefits of the alternatives and have calculated their economic value.
- After reviewing the benefit/cost ratio and payback period calculated from the data collected, we are ready to make a strategic decision about the environmental opportunity.