



# State of Oregon Department of Environmental Quality

## Clean Water State Revolving Fund

### Cost and Effectiveness Analysis Guide

Contact: [Regional Project Officer](#)

## A. Policy Background

A Cost and Effectiveness Certification is required by section [602\(b\)\(13\)](#) of the Clean Water Act to demonstrate that the proposed project is the most cost effective approach to achieving the project's water quality goals. This is accomplished by: studying and evaluating the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project, and selecting to the maximum extent possible a project alternative that maximizes the efficient water use, reuse, recapture, conservation, and energy conservation.

Oregon Administrative Rule [340-054-0022\(3\)\(j\)](#) requires that the cost and effectiveness analysis certificate be approved by DEQ.

## B. Guidance for completing the Cost and Effectiveness Analysis

The cost and effectiveness analysis should include:

- an alternatives analysis of at least 2 distinct approaches to project design (if applicable, cite the planning document).
  - A “no project alternative” may need to be included to further support the selection.
- cost analysis factors.
- non-monetary costs factors.
- the lowest-cost alternative should, in theory, be selected unless non-monetary factors indicate otherwise.

Example of the desired level of description using energy conservation as a parameter:

This project will utilize premium efficiency motors, and to the extent feasible, variable-frequency drives. However, it isn't feasible for us to use a renewable energy source. We have estimated total power consumption for each alternative considered, which is a line item within our table of O&M costs for each alternative and thus is factored into the cost evaluation. The power consumption for the recommended alternative was second lowest of the five alternatives considered, as shown on Table X.

### Point source

A planning document guide that can be used for wastewater point source projects is the [Guidelines for Preparing Wastewater Planning Documents and Environmental Reports](#). See Appendix C.2 (4) and (5) for more information about the recommended methodology for development and description of alternatives.

### Nonpoint source

For non-point source projects, a similar alternatives analysis must be completed. There is not a specific guidance document but the wastewater planning document above provides the general idea. Reach out to the regional project officer if more information is needed.

### Stormwater

For these types of projects, contact your [regional project officer](#).

Translation or other formats

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## C. Analysis Factors

The cost estimates developed for the Cost and Effectiveness Analysis may have a high level of uncertainty at the time of the analysis. In this case, the non-monetary factors can support the selection of the recommended alternative. Applying both cost analysis and non-monetary factors is also recommended for situations where one or more non-monetary factors are of extreme importance to the borrower.

### Cost Analysis Factors

1. Total project cost in present day dollars
2. Recommended planning period
3. Associated annual operations and maintenance cost
4. The cost of replacing the project or activity
5. Cost and effectiveness of processes, materials, techniques, and technologies for carrying out the proposed project

### Non-monetary Factors

1. Water conservation
  - Water reuse
  - Efficient water use
2. Energy conservation
  - Energy efficiency of major equipment
  - Efficient total power use
  - Low greenhouse gas emissions
  - Renewable energy source
  - Energy assessment and energy audit software
3. Community considerations. Recognizes the unique challenges faced by many borrowers and allows a community to promote and protect its values
  - Community mission statement or objectives
  - Community concerns regarding visual or odor effects
  - Other community concerns
4. Environmental considerations
  - Findings From Development Of Environmental Report, If Available
  - Minimize Impact to Flood Plains, Wetlands, Endangered Species, Historical And Archaeological Properties
  - Volume Of Waste Generation And Ease Of Handling Wastes
  - Minimize Carbon Footprint
5. Sustainability. The sustainability parameter can also be defined broadly. However, the basic theme is the need to consistently meet water and energy conservation requirements or objectives. Therefore, a more sustainable alternative is one with a lower degree of risk.
  - Operational Simplicity
  - Operator Certification

## D. How to complete and submit the Cost and Effectiveness Analysis to DEQ

Step	Who completes	Process
1	Borrower (or their representative)	Develop a memorandum that: <ol style="list-style-type: none"> <li>a. Describes each alternative considered for the proposed project               <ol style="list-style-type: none"> <li>i. May cite the planning document.</li> <li>ii. For additional details see Section B above: Guidance for completing the Cost and Effectiveness Analysis.</li> </ol> </li> <li>b. As needed, describes (for each alternative) how the non-monetary factors were considered and how the project incorporates water conservation, energy conservation, community considerations, etc.</li> <li>c. Describes WHY the recommended alternative is the basis for the proposed project.</li> </ol>
2	Borrower (or their representative) and the project engineer	Complete and sign the <a href="#">Cost and Effectiveness Certification Form</a> .
3	Borrower (or their representative)	Submit by email the Cost and Effectiveness signed certification to the DEQ project officer.
4	Project Officer	DEQ will approve the certification form through email back to the borrower or request additional information as needed.

### Timing of submission:

This certification is typically completed prior to construction loan signing. However, under certain circumstances it can be completed later and once the project is already underway. It must be submitted and approved **prior** to the final disbursement being paid. Please work with the project officer to determine when this best time for this requirement to be met for your project.

### Non-discrimination statement

DEQ does not discriminate on the basis of race, color, national origin, disability, age or sex in administration of its programs or activities. Visit DEQ's [Civil Rights and Environmental Justice page](#).