

LIFE CYCLE COST MODEL UPDATE

REPORT 07-5

REPORT DIGEST

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STATE OF WASHINGTON
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Study Background

The 2006 Supplemental Capital Budget directs JLARC to update the life cycle cost model developed in response to its 1995 performance audit entitled, "Capital Planning and Budgeting: Study of Leasing Versus Ownership Costs" (Report 95-16). JLARC developed several life cycle cost models during its 1995 audit to evaluate capital project decisions. Following the audit, the Department of General Administration (GA) created a more user-friendly version of these models in order to evaluate future leasing and/or ownership decisions.

This study is a review and update of the Department of General Administration's life cycle cost model, which is a tool used to estimate the long-term costs of leasing and/or ownership of facilities occupied by state agencies. The intent of the model is to provide comparable information for decision makers to consider when choosing among facility alternatives. JLARC is instructed to review the model's underlying economic assumptions and enhance the model's functionality by providing capabilities for comparing different financing approaches.

What is Life Cycle Cost Analysis?

Life cycle cost analysis is an economic tool used to calculate the total costs of an asset over its useful life. In the case of facility space, life cycle cost analysis looks at all quantifiable capital and operating costs of facility alternatives over their estimated useful lives and compares all costs on a same-year dollar basis.

Different Financing Approaches Impact Facility Life Cycle Costs

The state pays for facilities in a number of ways, ranging from cash to various forms of long-term debt. Long-term debt may include the sale of **general obligations bonds** or **certificates of participation**. There is also a relatively recent financing method known as **63-20 financing**, where a nonprofit is created to issue bonds and fund a capital project with the intention of leasing the facility to the state until the state takes ownership of the facility. The differences in cash flows and cost structures involved with various financing approaches impact the life cycle costs of the facility alternatives.

Agency Use of Life Cycle Cost Model

It was beyond the timeframe of this study to issue a comprehensive survey to all state agencies regarding their use of the GA life cycle cost model. However, GA reports that many agencies have asked GA to run the model on their behalf. GA has conducted life cycle cost analyses using the model for a total of 65 state projects since 1996.

Updates and New Features of Life Cycle Cost Model

JLARC has made updates and changes to the existing life cycle cost model, resulting in a more comprehensive and user-friendly tool for evaluating

different financing and project delivery options for state facility space. These updates and changes include the ability to:

- Compare up to six different ownership and project delivery alternatives and leasing options at the same time, and designate unique schedules and budgets for each alternative delivery method;
- Compare different financing scenarios for each of the ownership and project delivery approaches; and
- Review at once all of the major cost estimates and economic assumptions used for each alternative, and conduct sensitivity analyses on the major assumptions used to determine how sensitive the outcome of the analysis is to the major assumptions.

In addition, **JLARC has identified the key cost assumptions that require regular updates to ensure accurate estimates when using the life cycle cost model.**

State Lacks Policies and Standards for Using Model and Life Cycle Cost Analysis

According to the Office of Financial Management's (OFM) biennial capital budget instructions, agencies must use the life cycle cost model for all major projects that propose to use alternative financing. This requirement does not apply to projects financed through the sale of general obligation bonds or for agencies leasing space and considering other leasing options.

Beyond the current limited requirements around use of the model in particular, **the state lacks policies and standards for conducting life cycle cost analysis in general.** Only projects that require predesign studies (i.e., generally, construction projects estimated to cost \$5 million dollars or more) are required to conduct life cycle cost analysis. **OFM's Predesign Manual instructions do not specify which economic and cost assumptions must be used in life cycle cost analysis, such as a requirement to use a common discount rate.** Since these assumptions play a key role in determining which facility alternative is most cost-effective, it is important that agencies use consistent assumptions in their analyses to have comparable results across projects and agencies.

Limited Oversight and Review of Life Cycle Cost Analysis

Beyond the lack of policies and standards for using life cycle cost analysis, OFM reports that it does not review the results of life cycle cost analyses in enough detail to ensure that all calculations are technically accurate or that the analyses include all quantifiable costs to make fair comparisons among facility alternatives. **This limited oversight and review does not ensure that analyses across projects and agencies are consistent or accurate.**

Recommendations

1. The Office of Financial Management should maintain the updated life cycle cost model and should establish clear policies and standards regarding the use of the model in particular, and life cycle cost analyses in general, as part of the state's capital project review process.
2. The Office of Financial Management should review all life cycle cost analyses to ensure that the established policies and standards have been followed and that analyses have been conducted in a manner that is technically sound and accurate.
3. The Office of Financial Management should regularly update the cost assumptions in the life cycle cost model.