

State of Washington
Joint Legislative Audit and Review Committee (JLARC)



Life Cycle Cost Model Update

Report 07-5

February 21, 2007

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The Joint Legislative Audit and Review Committee (JLARC) carries out oversight, review, and evaluation of state-funded programs and activities on behalf of the Legislature and the citizens of Washington State. This joint, bipartisan committee consists of eight senators and eight representatives, equally divided between the two major political parties. Its statutory authority is established in RCW 44.28. This statutory direction requires the Legislative Auditor to ensure that performance audits are conducted in accordance with Government Auditing Standards as applicable to the scope of the audit.

JLARC staff, under the direction of the Committee and the Legislative Auditor, conduct performance audits, program evaluations, sunset reviews, and other policy and fiscal studies. These studies assess the efficiency and effectiveness of agency operations, impacts and outcomes of state programs, and levels of compliance with legislative direction and intent. The Committee makes recommendations to improve state government performance and to correct problems it identifies. The Committee also follows up on these recommendations to determine how they have been implemented. JLARC has, in recent years, received national recognition for a number of its major studies.

LIFE CYCLE COST MODEL UPDATE

REPORT 07-5

REPORT DIGEST

FEBRUARY 21, 2007



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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.

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CHAPTER ONE: INTRODUCTION

STUDY MANDATE

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). The life cycle cost model provides an economic analysis of leasing and/or ownership costs for facilities occupied by state agencies. 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, including state general obligation bond funding,¹ certificates of participation,² and 63-20 financing.

BACKGROUND

What is Life Cycle Cost Analysis?

Life cycle cost analysis is a method of calculating the total costs of ownership over the life of an asset. When considering whether to make capital investments today in order to generate future benefits, it is accepted professional practice to include a present value life cycle cost analysis in the decision-making process. In the case of state facility space, **life cycle cost analysis looks at all quantifiable capital and operating costs of facility alternatives over their estimated useful lives³ and compares all costs on a same-year dollar basis.** These costs may include costs for land acquisition, construction, project management, operations, equipment, and leasing fees. The alternatives under consideration may be constructing, leasing, or purchasing an existing facility or some combination of these options. To determine which alternative is most economical to the State’s taxpayers, it is important that *all* potential costs and benefits for the alternatives are taken into account.

Other Considerations in Leasing or Ownership Decisions

While life cycle cost analyses can provide critical information for decision-making, **decisions about leasing or owning should also take into account other considerations as well.** Often there are non-quantifiable costs or other issues that should be factored into decisions about whether to own or lease a building. These include cash flows, timing of the need for a facility, public accessibility, efficient use of staff time, employee morale, or the desirability of a historic, monumental structure. There are also benefits or savings that cannot always be quantified in an economic analysis. For example, the state may benefit from shifting the construction costs and schedule risks to the private sector under a leasing or private developer ownership option.

¹“General obligation bonds are the traditional form of debt financing for major construction projects. The state pledges full faith and credit and taxing power to pay principal and interest. The term of the bond is usually 25 years.” The interest paid to investors is tax exempt and the bonds are subject to a state debt limit. [Office of Financial Management’s 2007-17 Capital Budget Instructions, p. 35.]

² “Certificates of participation (COPs) are a form of debt financing contract with individual investors. COPs are sold in the public securities market and the interest earnings are tax-exempt. Debt service payments are made from operating budgets.” [Office of Financial Management’s 2007-17 Capital Budget Instructions, p. 35.]

³ RCW 43.19.1911 defines estimated useful life as “the estimated time from the date of acquisition to the date of replacement or disposal, determined in any reasonable manner.”

All of these issues should be taken into account after a full economic analysis has been conducted; and in many instances the economic analysis can be used for helping to place a value on considerations that initially are difficult to quantify. For example, although it is difficult to place a value on having a historic, monumental office building on the capitol campus instead of a more standard office building, the information from a life cycle cost analysis can inform decision-makers on the additional life cycle costs of the historic, monumental structure, thereby enabling them to decide if the benefit of having the structure seems warranted given the cost.

Different Financing Approaches

The state pays for facilities in a number of ways, ranging from cash to various forms of long-term debt. Many projects are financed through the sale of **general obligation bonds** or **certificates of participation**, or some combination of these and/or private funds. There is also a relatively recent financing mechanism in Washington known as **63-20 financing** (based on IRS Ruling 63-20). Under 63-20 financing, a single-purpose nonprofit corporation is created in order to issue bonds. Using bond proceeds, the nonprofit funds a capital project and contracts with a developer for construction. The state then leases the completed building from the nonprofit and, at the end of the lease, the State takes ownership of the building.

Given the differences in cash flows and cost structures involved with various financing approaches, comparing costs among several financing options can be challenging. Life cycle cost analysis offers a method to compare the economic advantages and disadvantages of different financing approaches available for a given project.

Development of a Life Cycle Cost Model

In 1995, JLARC (then known as the Legislative Budget Committee) conducted a performance audit of the state's process for evaluating leasing and ownership alternatives for government facilities. During the course of the audit, **JLARC developed several versions of a life cycle cost model to evaluate six capital project proposals and decisions.** The models were developed in consultation with a large group of stakeholders, including staff from the Office of Financial Management, the Legislature, the Departments of Agriculture, Ecology, Fish and Wildlife, General Administration, Labor and Industries, and Natural Resources, as well as interested parties from the private sector. In some cases, the results of the life cycle cost analysis revealed that there were additional costs to the public that were not factored into past leasing versus ownership decisions.

Recommendations from JLARC's 1995 Performance Audit

JLARC's 1995 performance audit of the capital planning and budgeting process found that a thorough economic analysis had not been conducted for the six capital projects under review. **JLARC concluded that past ownership decisions for government buildings would have benefited from a comprehensive economic analysis that identifies all the costs and benefits to the public of alternatives under consideration.**

JLARC made seven recommendations in its 1995 report related to the proper and consistent use of life cycle cost analysis in capital budget decision-making and the value of a major maintenance and repair reserve fund. These seven recommendations are summarized below:

- The Legislature should require that life cycle cost analyses address all of the relevant cost considerations to state government and the taxpaying public.
- The Legislature should establish standards for the major assumptions in life cycle cost analyses.
- The Legislature should require that the Director of the Office of Financial Management review all life cycle cost analyses conducted for a project and attest to its accuracy and completeness.
- The Legislature should require that agencies provide an explanation for any assumptions used in a life cycle cost analysis that are different from an established standard.
- The Legislature should require that for project proposals with estimates of operational savings, the agency or agencies that would be responsible for achieving the savings should submit a plan for reducing agency spending commensurate with the estimated savings.
- The Legislature should require that the Director of the Office of Financial Management establish a process for tracking and reporting operational savings identified in the agency plans that are included in legislatively approved projects and long-term leases.
- The Legislature should authorize the establishment of reserve funds that would be adequate for major systems periodic repair and replacement.

These 1995 recommendations were intended to strengthen the process for evaluating project proposals and ensure that life cycle cost analyses would be conducted consistently and accurately.

Following the release of JLARC's audit, the Department of General Administration (GA) developed a more user-friendly version of the life cycle cost model. GA's model was based on the same underlying economic principles and analysis as the models developed by JLARC, but it was formatted in a manner that would allow GA and other agencies to evaluate future leasing and/or ownership alternatives. GA's version of the model has sometimes been referred to as the "JLARC model" because it was based on JLARC's work during the 1995 performance audit. **This study is a review and update of GA's life cycle cost model, which is a tool used to calculate estimates of the total costs of ownership and/or leasing over the projected useful lives of facility alternatives.**

STUDY SCOPE

This study will provide updates and enhancements to the life cycle cost model developed in response to JLARC's 1995 performance audit entitled, "Capital Planning and Budgeting: Study of Leasing Versus Ownership Costs" (Report 95-16). The study will review the model's underlying assumptions and enhance the model's functionality by providing capabilities for comparing different financing approaches, including state general obligation bond funding, certificates of participation, and 63-20 financing.

STUDY OBJECTIVES

1. Determine how the current life cycle cost model has been used to evaluate leasing versus ownership costs for state capital planning and budgeting purposes.

2. Identify what elements of the model's underlying assumptions and estimated costs need to be updated by the Department of General Administration.
3. Review the Department of General Administration's 2005 Tumwater Office Properties project, which used the 63-20 financing process, as a case study to determine what modifications and/or adjustments are needed to the model to allow for accurate comparisons of alternative financing approaches.
4. Based on the results of the case study review, provide revisions to the model which would be necessary to allow for accurate comparisons of alternative financing approaches.
5. Evaluate opportunities to modify the model's functionality for producing reliable analysis for decision-making.

STUDY APPROACH

JLARC contracted with the original architects of the life cycle cost models used during its 1995 performance audit of capital planning and budgeting to update the model. The 2005 Tumwater Office Properties project was used as a case study to determine what changes were needed to the model to allow for accurate comparisons of alternative financing approaches. JLARC and its consultants also interviewed major stakeholders to determine how the model has been used over the past decade and to identify the strengths and weaknesses of the current model. JLARC's consultants used information gathered during interviews and a review of the Tumwater project to create a more robust and user-friendly model with enhanced capabilities for analyzing different ownership, delivery and financing alternatives.

REPORT ORGANIZATION

Chapter 2 provides an overview of the historical use of the life cycle cost model. It also describes some limitations with the requirements around using the model and the oversight and review of life cycle cost analyses in general.

Chapter 3 includes a review of the existing life cycle cost model and highlights the changes made as well as new features incorporated into the updated life cycle cost model developed for this study.

Chapter 4 summarizes the study's findings and recommendations.

CHAPTER TWO: HISTORICAL USE OF LIFE CYCLE COST MODEL

AGENCY USE OF THE LIFE CYCLE COST MODEL

The Department of General Administration's life cycle cost model is published on the Department's website and is available for use by state agencies. GA indicates that it periodically receives requests from agencies to conduct life cycle cost analyses on their behalf. In response to these requests, GA has used the model to analyze life cycle costs of facility alternatives based on the needs and specifications of the requesting agency. In a small number of cases, GA has chosen to use the model on its own to assess project alternatives. These include some co-location projects where several agencies may be considering consolidating into one facility.

It was beyond the timeframe of this study to issue a comprehensive survey to all state agencies in order to determine the extent to which agencies are using GA's model or life cycle cost analyses in general for capital budget planning purposes. We did learn from our interviews with key stakeholders, including staff from OFM, the Legislature, several state agencies and higher education institutions, that agencies sometimes hire private consultants to conduct life cycle cost analyses on their behalf. We do not know whether these analyses are consistent with the principles and assumptions underlying GA's model.

FOR WHICH PROJECTS HAS THE DEPARTMENT OF GENERAL ADMINISTRATION USED THE LIFE CYCLE COST MODEL?

Figure 1 on the following page shows the requesting agencies and projects where GA has conducted a life cycle cost analysis using the model. There are a total of 65 state projects that GA has analyzed using the model since 1996. The majority of these projects have the following common attributes:

- Agencies are occupying leased space and are considering purchasing or building state-owned space;
- Facility space needs are 30,000 square feet or more; and
- Project costs are estimated at \$10 million or more.

A few of the projects listed in Figure 1 are exceptions to the attributes listed above. For example, the Office of Indian Affairs building was the smallest scale project for which GA has used the life cycle cost model, totaling less than 2,000 square feet of space.

Life Cycle Cost Model Update

Figure 1 – Projects for which the Department of General Administration Has Used the Life Cycle Cost Model - 1996 through November 2006

Requesting Agency/Agencies	Project
1. Attorney General	Downtown Seattle Office Building
2. Attorney General/Department of General Administration	Downtown Seattle Government Center Building
3. Central Washington University	Burien Campus Building
4. Department of Agriculture	Yakima Agricultural Building
5. Department of Corrections	Corrections Industries Building (several locations)
6. Department of Ecology	Bellevue Ecology Acquisition
7. Department of Fish & Wildlife	Fish & Wildlife Building
8. Department of General Administration*	Acquisition of Centennial I and Centennial II Buildings
9. Department of General Administration*	Acquisition of Dexter-Horton Building
10. Department of General Administration*	Acquisition of Kelso Building
11. Department of General Administration*	Acquisition of Old Federal Building
12. Department of General Administration*	Acquisition of Old Thurston County Courthouse Building
13. Department of General Administration*	Bremerton Office Complex in proposed Government Center
14. Department of General Administration*	Fife Surplus Warehouse
15. Department of General Administration*	GA Building Renovation vs. New
16. Department of General Administration*	GA Light Industrial Park
17. Department of General Administration*	1063 Capitol Building
18. Department of General Administration*	New Motor Pool Facility
19. Department of General Administration*	Newmarket Warehouse
20. Department of General Administration*	Old Federal Building in Everett
21. Department of General Administration*	Press House Renovation vs. Modulars
22. Department of General Administration*	Raymond Building
23. Department of General Administration*	Riverpoint Commercial Office Building
24. Department of General Administration*	Seattle Co-location
25. Department of General Administration*	South Bend Building
26. Department of General Administration*	Spokane Office Building
27. Department of General Administration*	Statewide Office Space Acquisition
28. Department of General Administration*	Sunset Life Building acquisition proposal
29. Department of General Administration*	Tacoma Rhodes Analysis
30. Department of General Administration*	Trent Plaza Acquisition
31. Department of General Administration*	TVW Acquisition of the 1058 Building
32. Department of General Administration*	TVW Heritage Capitol Building proposal
33. Department of General Administration*	Union Street Office Building
34. Department of General Administration*	Vine Street Property Acquisition

Life Cycle Cost Model Update

Requesting Agency/Agencies	Project
35. Department of Health	Department of Health Building
36. Department of Health	Tumwater Office Building
37. Department of Information Services	DIS Office Building and Computer Center
38. Department of Labor & Industries	L&I Building Addition vs. Lease at Point Plaza
39. Department of Licensing	Acquisition and remodel and/or build new North Seattle Licensing Office
40. Department of Licensing	Vancouver Washington State Patrol and Department of Licensing Office
41. Department of Parks & Recreation	Parks & Recreation Building
42. Department of Revenue	Department of Revenue Building Acquisition
43. Department of Services for the Blind	Acquisition of Alaska Building – Seattle
44. Department of Services for the Blind	Alaska Building – New vs. Renovation
45. Department of Social and Health Services	Bellevue DSHS Building
46. Department of Social and Health Services	Bellingham 30,346 SF Building
47. Department of Social and Health Services	Seattle DSHS Building
48. Department of Social and Health Services	Wenatchee DSHS Facility
49. Department of Transportation	Capital Plaza Acquisition
50. Eastern Washington University and Washington State University	New Classroom Space in Spokane
51. Employment Security Department	Kennewick Customer Service Center
52. Governor's Office	7E7 Employment Resource Center
53. Legislature through proviso then Office of Financial Management	Pritchard Building Renovation
54. Legislature through proviso then Office of Financial Management	Executive Office Plaza/Heritage Center project
55. Office of Financial Management	Construction of a Small Agencies Building
56. Office of Financial Management	IBM Building Renovation vs. New
57. Office of Indian Affairs	Office of Indian Affairs – New Building
58. Secretary of State	Heritage Center Construction (not the recent project – an earlier effort)
59. Secretary of State	Records Center Addition
60. Secretary of State	Secretary of State Storage
61. State Investment Board	State Investment Board Building
62. Washington State Patrol	Port Angeles WSP Detachment Office
63. Washington State Patrol	WSP Seattle Crime Lab
64. Washington State Training and Conference Center	New Dorm at WSTCC
65. Washington State Training and Conference Center	WSTCC Sale Evaluation

Source: Department of General Administration.

**For some projects where the Department of General Administration is designated as the requesting agency, another state agency may have initiated the request but data is not readily available to confirm the request.*

TIME AND RESOURCES NEEDED TO USE MODEL

The time and resources required to conduct a life cycle cost analysis using the GA model depend significantly on the complexity and/or uniqueness of the project under consideration, the number and type of alternatives being explored, and the degree to which cost data is readily available.

GA maintains general information on land and building costs as well as lease rates for many locations around the state. For GA, conducting a life cycle cost analysis for a standard office space with few unique requirements may take as few as one to two staff days. However, if cost assumptions need to be gathered for a specialized facility, the staff time requirements may increase to several weeks or months.

LIMITED REQUIREMENTS FOR USE OF GA'S LIFE CYCLE COST MODEL

State agencies are under no statutory obligation to use GA's life cycle cost model when they request capital funding for facility space. Currently, the only requirement for agencies to use the GA life cycle cost model is found in OFM's Capital Budget Instructions. Under these instructions, agencies are required to use GA's life cycle cost model (sometimes referred to as the "JLARC model") for all major projects and program projects that propose to use alternative financing.⁴ Because this requirement only applies to alternative-financed projects, it does not cover projects financed through the sale of general obligation bonds (GO bonds). OFM reports that agencies are also not required to use the model if they are currently in a leased space and proposing to move to a different leased space. The budget instructions do not require the results of the model to be formally documented in the budget request, although OFM analysts have often subsequently asked for these results.

REQUIREMENTS FOR USING LIFE CYCLE COST ANALYSIS IN GENERAL

In addition to the requirement described above related to the specific use of GA's life cycle cost model, the Legislature has emphasized the importance of using life cycle cost analysis when deciding among public facility alternatives in two different statutes. **RCW 43.82.010 indicates that the director of GA can enter into a long-term lease greater than ten years if "an analysis shows that the life cycle cost of leasing the facility is less than the life cycle cost of purchasing or constructing a facility..."** The Legislature further indicates its desire to consider life cycle costs in the selection of facility alternatives in **Chapter 39.35B RCW**.

⁴OFM's 2007-2017 Capital Budget Instructions define major project as projects with one or more of the following features: cost more than \$5 million, cost more than \$1 million and involve contractual arrangements for space or facilities (alternative financing), lease more than 30,000 new gross square feet of space, and/or take two or three biennia to design, construct, and occupy (p. 24). Alternative financed projects are projects that are financed through means other than state general obligation bonds. These include projects financed through certificates of participation, 63-20 financing or a mix of public and private sector funds.

Among other things, the statute expresses the Legislature's intent to:

- “Encourage the **recognition, development, and use of life cycle cost concepts and procedures by both the executive and legislative branches** in the state's design development and capital budgeting processes;
- Ensure the **dissemination and use of a common and realistic discount rate**⁵ by all state agencies in the calculation of the present value of future costs; and
- Allow and encourage the executive branch to develop specific techniques and procedures for the state government and its agencies, and state universities and community colleges to implement this policy.”

Chapter 39.35B RCW holds the principal executives of all state agencies responsible for implementing policies related to the use of life cycle cost analysis, and **provides specific direction to the Office of Financial Management and the Department of General Administration to establish guidelines for compliance** by state government agencies and higher education institutions. The statute further directs OFM to include within its biennial capital budget instructions **a discount rate to use in all life cycle cost analyses and a description of the types of projects and building components that are particularly appropriate for this type of analysis.**

LIMITED STATE OVERSIGHT AND REVIEW OF LIFE CYCLE COST ANALYSES

Currently, OFM has a general requirement in its Predesign Manual that all major projects undergo a life cycle cost analysis during the predesign phase of a project proposal.⁶ While the Manual describes some of the cost elements to be factored into the life cycle cost analysis, **the agencies have discretion in the type of life cycle cost analysis they conduct to fulfill this requirement.** These analyses are sometimes conducted by private consultants hired by state agencies.

Additionally, in its Predesign Manual, OFM provides guidance rather than a requirement for the use of a specific discount rate in life cycle cost analyses. **The Manual states that the calculation of the present worth of future investments should be based on “either the minimum acceptable rate of return for the owner for investment purposes or the current prime or borrowing rate of interest.** Whichever rate is used in the calculations, it must be clearly identified and consistent for each alternative studied.”⁷

There are several problems with OFM's discount rate guidance:

First, OFM's guidance allows agencies to choose among a range of discount rates and does not indicate the appropriateness of each. For example, the current prime rate may be much

⁵ In order to calculate the present value of long-term investments, future costs and benefits are discounted using a discount rate. The discount rate reflects the time value of money for investments. The rate is used to portray the future costs and benefits related to investments in same-day dollar terms (i.e., present value).

⁶ Office of Financial Management, 2006 Predesign Manual, (pp. 6-7).

⁷ Office of Financial Management, 2006 Predesign Manual, Appendix D 5-6.

higher than the state’s borrowing rate, which is tax-exempt. The results of a life cycle cost analysis using a relatively high real discount rate may be much different than the results of an analysis using a relatively low discount rate.

Figure 2 illustrates the outcomes of a life cycle cost analysis based on three hypothetical alternatives for obtaining an approximately 155,000 square foot facility and using three different discount rates. The lowest real discount rate used in this example is 1.5 percent, which is similar to the current state borrowing rate before inflation. Under this rate, the most cost-effective option is to construct a new building following the public works process and using COP financing (General Office Building B), while the most costly option is to lease space. In contrast, when a 7 percent real discount rate is applied, a rate equivalent to the federal Office of Management and Budget’s recommended rate for benefit-cost analyses of public investments, the leasing option is deemed to be most cost-effective. Figure 2 illustrates the significant impact the selection of a discount rate has on the results of a life cycle cost analysis.

Figure 2 – Selection of a Discount Rate Can Significantly Impact the Results of Life Cycle Cost Analysis

Project Type	Net Present Values (Discounted Over 50 Years)		
	Real Discount Rate 1.5%	Real Discount Rate 5%	Real Discount Rate 7%
General Office Building A (New state building construction following public works process and GO bond financed)	\$116,582,325	\$79,897,057	\$66,798,175
General Office Building B (New state building construction following public works process and COP financed)	\$107,447,053 (least expensive option at 1.5% discount rate)	\$73,373,895 (least expensive option at 5% discount rate)	\$61,269,618
Lease Option	142,109,808	\$76,806,510	\$59,222,331 (least expensive option at 7% discount rate)

Source: JLARC analysis.

Second, OFM’s guidance does not require a sensitivity analysis to determine how sensitive the results of the life cycle cost analysis are to the selection of a discount rate.

Third, OFM's guidance is only provided in the Predesign Manual and therefore may not be applicable to all major capital expenditures, such as a situation where an agency is considering purchasing the building where it is currently leasing space.

The guidance provided in the Predesign Manual is not sufficient to ensure that the results of life cycle cost analyses are comparable across agencies or that the discount rate selected is appropriate for the analysis conducted. Using inappropriate assumptions in life cycle cost analyses can give the state a false economic value for the selection of projects and may result in the selection of projects or financing approaches that could be more burdensome on taxpayers than alternatives.

When using the results of life cycle cost analyses in capital budget decision-making, it is also important to ensure that analyses are conducted in a technically sound and accurate manner. OFM indicates that it reviews the results of life cycle cost analyses when they are submitted by agencies for predesign funding or at other stages of a capital project review. Generally, the analyses are reviewed for consistency and reasonableness of the assumptions used across the alternatives being proposed, and to verify that essential costs have been included. However, OFM reports that it does not review the actual calculations in enough detail to ensure that all calculations are technically accurate throughout the analytical model used, or that the calculations include all quantifiable costs to make fair comparisons.

FINDINGS

Based on what we have learned about the use of the life cycle cost model in particular, and the requirements related to the use of life cycle cost analysis in general, we have the following findings:

FINDING 1: The state lacks specific policies and standards on conducting life cycle cost analysis and lacks clear guidance on when and how to use it. Further, there is limited oversight and review of the results of life cycle cost analyses in the capital project review process.

Without clear policies and standards on the use of life cycle cost analysis, the state is at risk for selecting projects that are not the most cost-effective for the state's taxpayers and may lead to the exclusion or deferral of other alternatives. Without sufficient oversight and review of life cycle costs analyses, there is increased risk that decisions could be based on incomplete or inappropriate cost assumptions.

FINDING 2: The selection of a discount rate is a key factor in determining which alternative is considered to be most cost-effective in life cycle cost analysis. OFM does not provide clear guidance to agencies on which discount rate to use.

OFM only provides guidance on the use of discount rates in its Predesign Manual and predesigns are not required for all capital project requests. The guidance allows agencies to use several different discount rates, which can lead to analyses that are not comparable from project to project or from agency to agency. Using an inappropriate discount rate can lead to the selection of projects that are more burdensome on the state's taxpayers than other alternatives.

CHAPTER THREE: REVIEW AND UPDATES TO LIFE CYCLE COST MODEL

The mandate for this study directs JLARC to identify which elements of the model's underlying economic assumptions need updating and to revise the model to allow for comparisons of different financing approaches. JLARC hired the original architects of the life cycle cost models developed during JLARC's 1995 performance audit of capital planning and budgeting to assist in reviewing and critiquing the existing life cycle cost model and determining what modifications were needed in order for the model to provide accurate comparisons of alternative financing methods. This review also provided an opportunity to identify ways to improve the model's functionality and utility for model users and decision-makers.

REVIEW OF THE EXISTING GA LIFE CYCLE COST MODEL AND ASSUMPTIONS

The life cycle cost model developed by GA in response to JLARC's 1995 performance audit follows standard life cycle cost analysis principles and was faithfully adapted from the models JLARC used to analyze capital projects during its audit.

JLARC's consultants identified two technical improvements that should be made to the model related to the calculation of residual values on buildings and, as discussed in this chapter and elsewhere in this report, we have several concerns related to the lack of standards and policies for economic and cost assumptions used in life cycle cost analyses.

Technical issues:

- The existing GA model calculates a residual value⁸ on the building cost only, and not on the full acquisition costs, including site work, consultant and project management fees, and other construction costs (once transaction costs have been omitted).
- The existing GA model calculates a residual value based on a depreciation schedule that may distort the life cycle cost comparisons between alternatives.

Specific concerns related to the economic and cost assumptions used:

Lack of policy standards related to economic assumptions

As mentioned in Chapter 2, the state has not set policy standards for the use of key economic assumptions in life cycle cost analysis. In general, the **same discount rates and same inflation rates should be used by all model users** on the same kinds of analyses to ensure consistent and reliable comparisons across ownership alternatives and across projects that the State is considering funding. If these assumptions are unrealistic or inconsistent, the results of life cycle cost analyses can inappropriately favor one alternative over another.

⁸ The residual value (also known as salvage value) of a facility is the estimated value at the end of its economic life cycle or the end of the study period. When evaluating alternatives with different useful lives, "the value of a system at the end of its useful life is normally equal to its salvage value less the cost incurred for its removal or disposal." See Appendix D 5-6 of the Office of Financial Management's 2006 Predesign Manual.

Need for regular updates to certain cost assumptions

The most recent update to cost assumptions in the existing version of the model occurred in 2000. Since then, assumptions have been inflated according to the general inflation rate but not otherwise adjusted. Based on JLARC's review of the changes that occurred between the development of the model and the cost assumption updates in 2000, **the model elements listed below are the ones that should be updated on a regular basis (i.e., every two to three years) to ensure more accurate life cycle cost estimates.**

- Utilities
- Custodial
- Maintenance
- Security
- Property Taxes
- Insurance
- Parking
- Tenant Improvement Reserve
- Capital Replacement Reserve
- Management Fees

In addition, as is the current practice, the **interest rates and transaction costs relative to financing** should be kept current and consistent in the model. The Treasurer's Office maintains the most up-to-date information on these rates.

FINDING

Finding 3: There are some key cost assumptions that require regular updates to ensure accurate and comparable life cycle cost estimates when using the life cycle cost model.

REVIEW OF 2005 TUMWATER OFFICE PROPERTIES PROJECT

The existing life cycle cost model developed by GA did not have the capability of calculating the costs of a facility financed and delivered through a 63-20 process, the method used for the Tumwater Project. This type of financing and delivery method is relatively recent to Washington and involves different budgeting and scheduling timelines and financing assumptions. To estimate costs for this project, GA had to develop its own analytical format to capture some of the differences between 63-20 financing and other financing alternatives. The GA analysis primarily revolved around differences in transaction costs and financing rates, but did not incorporate the full impact on budgets, financing periods or leasing holdover costs related to when an agency incurs the cost of locating elsewhere until a facility project is complete. JLARC's consultants reviewed GA's analytical efforts for the Tumwater Project in the course of updating the model to accommodate 63-20 and other delivery and financing combinations that may be considered by the state.

Based on the review of the project data, JLARC's consultants identified the key elements that impact costs under 63-20 financing and other likely delivery and financing options. These cost elements include different baseline budgets, different construction period financing resulting from different financing rates and different periods of required borrowing, different transaction costs, different delivery timeframes, and the potential cost avoidance of required leasing at an alternative location. All of these elements have been factored into the updated life cycle cost model to allow for more robust comparisons between 63-20 projects and other types of projects under consideration.

NEW FEATURES OF THE UPDATED LIFE CYCLE COST MODEL

JLARC has made changes and updates to the existing life cycle cost model, resulting in a **more comprehensive and user-friendly tool for evaluating the economics of alternative delivery and financing of facility space for state agencies**. The earlier version of the model is not capable of comparing multiple alternatives at the same time (without re-running the model several times) or taking into account all of the financing and project delivery methods that are now available. The updated model allows for comparisons between many different financing and project delivery options at the same time. Below are highlights of the major changes and updates to the model.

More ownership alternatives and project delivery approaches

The updated model allows for cost comparisons of a combination of up to six different ownership and project delivery alternatives and leasing at the same time. These combinations may include:

- State building development options following the requirements of the state's public works process
- Several private development alternatives, including 63-20⁹
- An option to directly purchase a new facility
- The ability to compare refurbishing an existing facility to acquiring a new facility or leasing
- An option to lease a facility

In addition, updates to the model have resulted in a more accurate reflection of cost differences between delivery methods by allowing the user to address differences in the assumed timeframe of a project. For example, some ownership alternatives can have higher costs because they take longer to complete. Cost increases may be a result of construction inflation, interest on borrowed money if the money is borrowed for a longer period of time, and/or costs related to delaying a move from a leased space. **The updated model allows for a unique schedule and budget for each alternative delivery method.**

More financing options

The updated model allows the user to choose different financing scenarios for the ownership and delivery approaches listed above. These financing alternatives include:

- Public works development with financing through general obligation bonds or certificates of participation
- Private (or public works) development with certificate of participation financing either at the beginning or the end of the project
- 63-20 financing
- Short- or long-term leases, depending on the terms of the leased-spaces under consideration

⁹ As mentioned in Chapter 1, under 63-20 financing, the state leases a building from a private non-profit created specifically for the purpose of project development and at the end of the lease, the state purchases and owns the building.

New method for comparing alternatives with different useful lives

In response to the technical concerns noted earlier related to the calculation of residual values, the updated model includes a new approach to addressing the issue of facilities that have different useful lives. This new approach calculates an annual equivalent value for each alternative under consideration corresponding to its useful life, rather than estimating a residual value for the longer lived alternatives (such as by applying a residual value based on a depreciation schedule). This approach provides an unbiased comparison when comparing buildings with different useful lives, and is mathematically equivalent to other methods that avoid making assumptions about the remaining value of assets.¹⁰ For example, it is relatively easy in the updated model to compare the cost of a 25-year alternative with a 35-year alternative because each alternative is denominated in an annual cost that factors in the difference in economic lives.

A summary and sensitivity worksheet

The updated model contains a worksheet that **summarizes the major cost estimates and economic assumptions used for each ownership alternative under consideration**. This sheet allows the user to identify and change major economic assumptions, such as the useful life of buildings, discount rates, inflation rates, financing terms, and project schedule adjustments.

The summary sheet also allows the user to conduct sensitivity testing of the results. **Sensitivity testing is a method of changing assumptions in the model to see how sensitive the outcome of the life cycle costs comparison is to those assumptions**. For example, the user can see whether increasing or decreasing the discount rate results in a change in the option that is considered most cost-effective for the state. The user can also run sensitivity testing on the impact of project schedule acceleration or slippage for different delivery methods, changes to construction and land inflation rates, changes in the estimated useful lives of buildings, and other variables that factor into the summary cost estimates. Sensitivity testing also allows the user to quickly identify the assumptions that have little material impact on the cost comparison and therefore may not merit the time and effort that would be required to develop more detailed cost information.

Additional new features

Beyond the new capabilities described above, the updated model contains some new features that will allow for more enhanced analyses of costs for different facility alternatives. These include the ability to:

- **Calculate the transaction costs of an ownership option if it were to be sold before it reaches the end of its useful life.**
- **Add categories of operating costs** beyond those that were included in the earlier version of the model. These categories may come directly from the cost categories that are on OFM's Form C-3 (Benefit and Life Cycle Cost Analysis Summary) and/or Form C-100 (Capital Project Cost Estimate Form), which are required forms for all predesign studies of capital projects.
- **Calculate moving costs** if such costs are appropriate for a scenario under consideration.

¹⁰ The annual equivalent approach, as used in the updated model, is mathematically equivalent to the "chain method" or "least common multiple method." This is the textbook method often recommended for comparing alternatives with different useful lives, whereby, for example, a five-year alternative would be compared to a ten-year alternative by purchasing the five-year alternative twice.

- **Calculate a more precise annual equivalent cost of major maintenance and repairs** when more detailed cost information is available. Note that the model includes general cost estimates for major maintenance and repair, but a more precise estimate can be exchanged for the general estimate when available.
- **Calculate a workstation efficiency factor.** This factor compares the number of workstations that can be accommodated in a given space (based on rentable square feet) to other alternative spaces in order to determine which option best meets the space needs and requirements of state agencies.

SUMMARY

The life cycle cost model has been amended to reflect the economic costs of alternative delivery and financing methods. These changes and updates allow not only for comparisons of leasing and ownership alternatives, but also reflect the variety of options that can be considered by the state for acquiring facilities. The addition of a summary and sensitivity worksheet in the model should make the final cost estimates more transparent and understandable to both the technical and non-technical users of the model by displaying all the major economic and cost assumptions in one place. The result is a more robust tool for objective economic analysis of ownership and leasing alternatives that can be used in combination with other factors considered during the capital budget review process.

CHAPTER FOUR: FINDINGS AND RECOMMENDATIONS

FINDINGS

Finding 1: The state lacks specific policies and standards on conducting life cycle cost analysis and lacks clear guidance on when and how to use it. Further, there is limited oversight and review of the results of life cycle cost analyses in the capital project review process.

Without clear policies and standards on the use of life cycle cost analysis, the state is at risk for selecting projects that are not the most cost-effective for the state's taxpayers and may lead to the exclusion or deferral of other alternatives. Without sufficient oversight and review of life cycle costs analyses, there is also increased risk that decisions could be based on incomplete or inappropriate cost assumptions.

Finding 2: The selection of a discount rate is a key factor in determining which alternative is considered to be most cost-effective in life cycle cost analysis. OFM does not provide clear guidance to agencies on which discount rate to use.

OFM only provides guidance on the use of discount rates in its Predesign Manual and predesigns are not required for all capital project requests. The guidance allows agencies to use several different discount rates, which can lead to analyses that are not comparable from project to project or from agency to agency. Using an inappropriate discount rate can lead to the selection of projects that are more burdensome on the state's taxpayers than other alternatives.

Finding 3: There are some key cost assumptions that require regular updates to ensure accurate and comparable life cycle cost estimates when using the life cycle cost model.

These key elements include costs of utilities, custodial services, maintenance, security, property taxes, insurance, parking, tenant improvement reserves, capital replacement reserves, and management fees. Interest rates and transaction costs relative to financing should also continue to be kept current and consistent in the model.

RECOMMENDATIONS

Recommendation 1: The Office of Financial Management (OFM) 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. These policies and standards should be part of the biennial budget instructions and should include:

- **Specification of which projects must undergo life cycle cost analysis.**
- **Clarification of when and if the updated life cycle cost model must be used by agencies.**
- **Establishment of a standard discount rate that must be used in all life cycle cost analyses. OFM should consider identifying a range of discount rates for sensitivity analysis in order to determine how sensitive the results of the analysis are to the selection of a discount rate.**
- **Establishment of policies related to inflation rates and other key costs and savings that must be included in life cycle cost analyses.**

Life Cycle Cost Model Update

Implementation Date:	Spring 2008 in preparation for the 2009-11 budget process.
Fiscal Impact:	JLARC assumes this can be accomplished within existing resources.
Legislation Required:	No.

Recommendation 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.

Implementation Date:	In conjunction with the 2009-11 budget process.
Fiscal Impact:	JLARC assumes this can be accomplished within existing resources.
Legislation Required:	No.

Recommendation 3: The Office of Financial Management should regularly update the cost assumptions in the life cycle cost model.

Implementation Date:	Ongoing.
Fiscal Impact:	JLARC assumes this can be accomplished within existing resources.
Legislation Required:	No.

AGENCY RESPONSES

We have shared the report with the Department of General Administration and the Office of Financial Management. Their written comments are included as Appendix 2. JLARC's comments on their responses follow as Appendix 2A.

ACKNOWLEDGEMENTS

We greatly appreciate the assistance provided by staff of the Department of General Administration, the Office of the State Treasury, and the Office of Financial Management while conducting this study, as well as the assistance of our consultants, Robert Thomas and Robert Williams.

Ruta Fanning
Legislative Auditor

On February 21, 2007, this report was approved for distribution by the Joint Legislative Audit and Review Committee.

Representative Ross Hunter
Chair

APPENDIX 1: SCOPE AND OBJECTIVES

Life-Cycle Cost Model Update

SCOPE AND OBJECTIVES

OCTOBER 25, 2006



STATE OF WASHINGTON
JOINT LEGISLATIVE AUDIT AND
REVIEW COMMITTEE

STUDY TEAM

STEPHANIE HOFFMAN

PROJECT SUPERVISOR

KEENAN KONOPASKI

LEGISLATIVE AUDITOR

RUTA FANNING

Joint Legislative Audit & Review
Committee
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STUDY MANDATE

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). The life cycle cost model provides an economic analysis of leasing versus ownership costs for facilities occupied by state agencies. JLARC is instructed to review the model's underlying economic assumptions and enhance the model's ability to compare alternative financing approaches, including state general obligation bond funding, certificates of participation, and 63-20 financing.

BACKGROUND

JLARC developed several versions of a life cycle cost model in 1995 during the course of an audit of the state's capital planning and budgeting process. The audit found that past ownership decisions for government buildings would have benefited from a comprehensive economic analysis that identifies all the costs and benefits to the public of alternatives under consideration. In response to the audit, the Department of General Administration developed a more user-friendly version of the model, incorporating key features of the model used in the audit, for future use in leasing-versus-owning analyses. **The intent of the model is to provide better information for policy makers in choosing among comparable alternatives.**

What is Life-Cycle Cost Analysis?

When considering whether to make capital investments today in order to generate future benefits (e.g., buy a building to avoid future rent payments), it is accepted professional practice to include a present value life cycle cost analysis in the decision-making process. **Life cycle cost analysis looks at the costs of alternatives over time, such as constructing, leasing, or purchasing an existing facility, and compares all costs on a current dollar basis.** To determine which alternative is most cost-effective, it is important that *all* potential costs and savings for the alternatives are taken into account. **The Office of Financial Management's Capital Budget Instructions includes direction for when state agencies must conduct life cycle cost analysis for capital project requests.**

Alternative Financing Approaches

Alternative financed projects involve contractual arrangements for space or facilities. These include projects financed through the sale of **general obligation bonds** and **certificates of participation** as well as a relatively recent financing mechanism in Washington known as **63-20 financing** (based on IRS Ruling 63-20). Under 63-20 financing, a single-purpose nonprofit corporation is created in order to issue bonds. Using bond proceeds, the nonprofit funds a capital project and contracts with a developer for construction. The state then leases the completed building from the nonprofit and, at the end of the lease, the state owns the building.

Due to the fact that there are different cash flows and cost structures involved with these various financing approaches, comparing costs across them can be challenging. Life-cycle cost analysis offers a method to improve the ability to compare the economic advantages and disadvantages of different financing approaches available for a given project.

STUDY SCOPE

This study will provide updates and enhancements to the life cycle cost model developed by JLARC during its 1995 performance audit entitled, "Capital Planning and Budgeting: Study of Leasing Versus Ownership Costs" (Report 95-16). The study will review the model's underlying assumptions and enhance the model's functionality by providing capabilities for comparing alternative financing approaches, including state general obligation bond funding, certificates of participation, and 63-20 financing.

STUDY OBJECTIVES

The study will seek to address the following issues:

1. Determine how the current life cycle cost model has been used to evaluate leasing versus ownership costs for state capital planning and budgeting purposes;
2. Identify what elements of the model's underlying assumptions and estimated costs need to be updated by the Department of General Administration;
3. Review the Department of General Administration's 2005 Tumwater Office Properties project, which used the 63-20 financing process, as a case study to determine what modifications and/or adjustments are needed to the model to allow for accurate comparisons of alternative financing approaches.
4. Based on the results of the case study review, provide revisions to the model which would be necessary to allow for accurate comparisons of alternative financing approaches; and
5. Evaluate opportunities to modify the model's functionality for producing reliable analysis for decision-making.

METHODOLOGY

JLARC will contract with the original architects of the life cycle cost model to fulfill the study objectives. The 2005 Tumwater Office Properties project will be used as a case study to determine what changes are needed to the model to allow for accurate comparisons of alternative financing approaches.

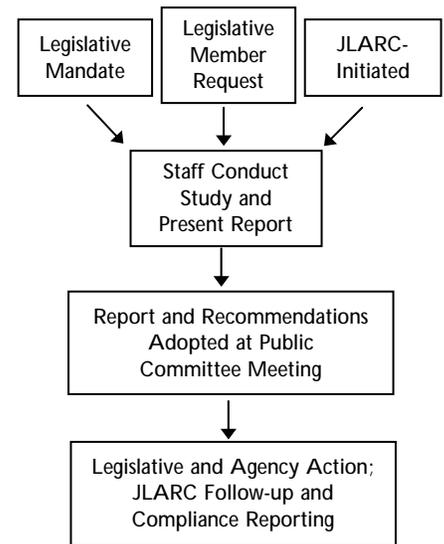
Timeframe for the Study

The results of the life cycle cost model update will be available in January 2007.

JLARC Staff Contact for the Study

Stephanie Hoffman	(360) 786-5176 hoffman.stephanie@leg.wa.gov
Keenan Konopaski	(360) 786-5187 konopaski.keenan@leg.wa.gov

JLARC Study Process



Criteria for Establishing JLARC Work Program Priorities

- Is study consistent with JLARC mission? Is it mandated?
- Is this an area of significant fiscal or program impact, a major policy issue facing the state, or otherwise of compelling public interest?
- Will there likely be substantive findings and recommendations?
- Is this the best use of JLARC resources: For example:
 - Is the JLARC the most appropriate agency to perform the work?
 - Would the study be nonduplicating?
 - Would this study be cost-effective compared to other projects (e.g., larger, more substantive studies take longer and cost more, but might also yield more useful results)?
- Is funding available to carry out the project?

APPENDIX 2: AGENCY RESPONSES

- Department of General Administration
- Office of Financial Management

JLARC's comments on agency responses follow as Appendix 2A.



STATE OF WASHINGTON

DEPARTMENT OF GENERAL ADMINISTRATION

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January 19, 2007

TO: Ruta Fanning, Legislative Auditor
Joint Legislative Audit Review Committee

FROM: Linda Villegas Bremer, Director
Department of General Administration

SUBJECT: Preliminary Report – “Life-Cycle Cost Model Update”

Thank you for providing us with the opportunity to comment on the Preliminary Report regarding the “Life-Cycle Cost Model Update.” The Department of General Administration (GA) appreciates the collaborative approach with which the Joint Legislative Audit Review Committee (JLARC) has undertaken this review.

The final version of the model was received this week and is being evaluated by GA staff. While there may be a few technical questions about the model, it is recognized as much improved over the original application.

Recommendation	Agency Position	Comments
Recommendation 1	Concur	GA concurs with this recommendation but it is not entirely clear whether the revised Life-Cycle Cost Model would replace or supplement existing models such as the C-3 form used in the pre-design report process or the Energy Life-Cycle Cost Analysis used by GA.
Recommendation 2	Concur	
Recommendation 3	Concur	



Ruta Fanning
January 19, 2007
Page 2

We look forward to working with staff from JLARC and the Office of Financial Management on the application of the model.

Please contact either Pat Buker, Assistant Director at 902-0979, or Dr. Craig Donald, Project Director at 902-7344, if you have additional questions regarding this response.

cc: Pat Buker, Senior Assistant Director, Facilities Division
Bob Bippert, Senior Deputy Assistant Director, Buildings, Grounds & Real Estate
Craig Donald, Project Director, Facilities Division
Tom Saelid, Senior Budget Assistant, OFM
Steve Masse, Budget Assistant, OFM



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JAN 24 2007

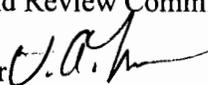
JLARC

STATE OF WASHINGTON
OFFICE OF FINANCIAL MANAGEMENT

Insurance Building, PO Box 43113 • Olympia, Washington 98504-3113 • (360) 902-0555

January 22, 2007

TO: Ruta Fanning, Legislative Auditor
Joint Legislative Audit and Review Committee

FROM: Victor A. Moore, Director 

SUBJECT: PRELIMINARY REPORT – LIFE CYCLE COST MODEL UPDATE

Thank you for seeking input from the Office of Financial Management (OFM) on the Joint Legislative Audit and Review Committee's preliminary report on the Life Cycle Cost Model Update. We appreciate the opportunity to respond.

Recommendation	Agency Position	Comments
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.	Partially concur	We would value having this kind of information and are already taking steps to build and deploy a new capital budgeting system. Adding these new components would entail more resources so that we can properly ensure the life cycle cost model can be maintained accurately and users are trained.
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.	Partially concur	We agree that OFM and the Legislature need high quality information to support decision making on capital projects. OFM's primary role is to review the products of the life cycle cost model for the purposes of examining agency space requests. This does not include a technical review of the basic assumptions made in the analyses.
3. The Office of Financial Management should regularly update the cost assumptions in the life cycle cost model.	Concur	

OFM is updating and improving the capital budget processes as part of a previous Joint Legislative Audit and Review Committee report. The life cycle cost model will be part of that update.

If you have any questions, please contact Tom Saelid at (360) 902-0562 or tom.saelid@ofm.wa.gov.



APPENDIX 2A: JLARC'S COMMENTS ON AGENCY RESPONSES

We are pleased that the Office of Financial Management and the Department of General Administration either concur or partially concur with our recommendations. The Department of General Administration raised one topic in its response that the JLARC auditors would like to clarify.

Recommendation 1 of the report indicates that 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 and life cycle cost analyses. The Department of General Administration, while concurring, indicated they felt it was unclear whether the model JLARC developed would replace or supplement other existing models in use by the Department and other agencies.

The JLARC recommendation is not intended to have the new model replace other models that have been developed for different statutory reasons. However, our recommendation, if implemented by the Office of Financial Management, should serve to clarify when agencies should use the new life cycle model in addition to other analyses.

