

State of Washington

PREDESIGN MANUAL

Office of Financial Management
Budget Division
June 2016



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SECTION 1: ABOUT THE PREDESIGN

1. Purpose of the Capital Project Pre-design

The Office of Financial Management (OFM) is required by [RCW 43.88.110\(5\)](#) to institute procedures for reviewing capital projects proposed by state agencies. A pre-design is one step in a comprehensive review and funding process.

The intent of a pre-design is to explore alternatives for proposed capital projects. The pre-design should assess which alternative best addresses the problem, opportunity, or program requirement and at what cost. Decision makers in the Governor’s Office, OFM and the Legislature use this information to determine whether the project should proceed to design and construction.

2. Pre-design Basics

It is highly recommended that agencies schedule an initial scoping meeting with their [OFM capital budget analyst](#) and pre-design consultant (if selected) to confirm the pre-design requirements and expectations for the project. Pre-designs are required for:

- All capital projects valued over \$5 million (\$10 million for higher education).
- Projects valued between \$1 million and \$5 million (\$2 million to \$10 million for higher education) that are selected by the Legislature or OFM because they are particularly time sensitive, have high risk, or are of particular interest to decision makers.

Note: For projects under \$5 million, agencies must submit a modified pre-design for any space request to lease, purchase, or build facilities that involve (a) housing of new state programs, (b) a major expansion of existing state programs, or (c) relocation of state agency programs. This includes the consolidation of multiple agency tenants into one facility, as directed by [RCW 43.82.035](#). Information about the modified pre-design can be found at <http://www.ofm.wa.gov/budget/facilities/modifiedpre-design.asp>.

If an appropriation for a pre-design is included in the budget, the pre-design scope must align with any associated budget provisos. Agencies undertaking a pre-design without an appropriation should coordinate with their [OFM capital budget analyst](#).

Depending on the scope of a proposed project, not all pre-design content in this manual may be required (for example, when a pre-design appropriation is limited in scope or identifies a specific building or site). Contact an OFM capital budget analyst for approval early in the pre-design process if one or more sections of the pre-design will not add value for decision makers. Efforts to exceed the pre-design requirements outlined in this manual may be better suited for the project design phase.

Pre-designs are generally about 1 percent of the total estimated project cost, depending on the magnitude and complexity of the project. The table below provides a basic funding standard for pre-designs. The pre-designs for projects limited in scope should cost less than standard pre-designs.

MAJOR PROJECT PREDESIGN STUDY FUNDING STANDARD

Project Complexity	Project Cost (in millions)			
	\$5-10	\$10-20	\$20-40	More than \$40
Complicated	1.25%	1.00%	0.70%	0.60%
Standard	1.15%	0.85%	0.60%	0.50%
Uncomplicated	1.00%	0.70%	0.50%	0.40%

3. Predesign Submittal

For projects to qualify for design consideration in the capital budget, the predesign should be submitted no later than July 1 of even-numbered years, as required in the Capital Budget Instructions. If predesign and design are funded in the same biennium, OFM will not release the allotment for design of the project until the predesign is approved ([RCW 43.88.110](#)).

Send two hard copies and three USBs with an electronic version to OFM at the address listed below. OFM staff will distribute the predesign to staff of the House Capital Budget Committee and the Senate Ways and Means Committee.

Office of Financial Management
Capital Budget
P.O. Box 43113
Olympia, WA 98504-3113

4. Predesign Review and Approval

Once a predesign is submitted, OFM will review the document to ensure that projects are carried out in accordance with this predesign manual and the direction provided in the capital budget. OFM may require changes or additional information before approval. Agencies should make appropriate allowance for the time involved in the review and approval process. Approval of the completed predesign does not guarantee additional appropriation for design or construction.

To facilitate the approval process, it is recommended that agencies meet with OFM and legislative staff to present a high-level summary of their predesign and to answer any preliminary questions. Agencies should contact their [OFM capital budget analyst](#) to schedule.

SECTION 2: CONTENTS OF A PREDESIGN

A predesign should include the content detailed in this section. Contact an OFM capital budget analyst early in the predesign process if specific content detailed below will not aid decision makers in assessing which alternative best addresses the problem, opportunity, or program requirement. OFM will approve limited scope predesigns on a case-by-case basis.

1. Executive Summary

Summarize the problem, opportunity, or program requirements; alternatives considered; preferred alternative; and why it was chosen. Include basic project cost information.

2. Problem Statement

- A. Identify the problem, opportunity or program requirement that the project addresses and how it will be accomplished.
- B. Identify and explain the statutory or other requirements that drive the project's operational programs and how these affect the need for space, location or physical accommodations. Include anticipated population projections (growth or decline) and assumptions.
- C. Explain the connection between the agency's mission, goals and objectives; statutory requirements; and the problem, opportunity, or program requirements.
- D. Describe in general terms what is needed to solve the problem.
- E. Include any relevant history of the project, including previous predesigns that did not go forward to design or construction.

3. Analysis of Alternatives (including the preferred alternative)

- A. Describe all alternatives that were considered, including the preferred alternative. Alternatives may include co-location, renovation, leased space, purchase, new construction, or other options explored. Include:
- i. A no action alternative. Describe the programmatic outcome of not addressing the problem or opportunity.
 - ii. The advantages and disadvantages of each alternative. Please include a high-level summary table with your analysis.
 - iii. Cost estimates for each alternative.

- a) Provide enough information so decision makers have a general understanding of the project costs.
- b) To compare the life cycle cost of different alternatives, use [OFM's Life Cycle Cost Model \(RCW 39.35B.050\)](#). Include the completed life cycle cost spreadsheet ([Life Cycle Cost Model 2016](#)) as an appendix. For more information, see <http://www.ofm.wa.gov/budget/facilities/costanalysis.asp>.

If this life cycle cost analysis is not relevant to the predesign, explain. Many consultants have developed their own life cycle cost analysis tools; however, OFM's Life Cycle Cost Model is the only authorized tool for the completion of this section because it provides a standard methodology and set of assumptions for all capital projects.

Note: The Life Cycle Cost Model should not be confused with two other life cycle cost analysis tools maintained by the state and required during the design phase of many capital projects. The use of these tools is optional during predesign.

- 1) The DES Energy Program's [Energy Life Cycle Cost Analysis \(ELCCA\)](#) is required for projects over 25,000 square feet ([RCW 39.35.050](#)). This tool evaluates energy-using systems such as heating, cooling, lighting, building envelope, and domestic hot water. For more information, see <http://www.des.wa.gov/services/facilities/Energy/ELCCA/Pages/default.aspx>. Although this tool is not required for the predesign, it is required early in the design phase.
- 2) OFM's Life Cycle Cost Tool (LCCT) is used for the design of facilities with an area of 5,000 square feet or greater ([Executive Order 13-03](#)) to demonstrate how the building design contributes to energy efficiency and conservation. The tool, instructions, and training webinars are available at <http://ofm.wa.gov/budget/forms.asp>. Although this tool is not required for the predesign, it is required early in the design phase.

- iv. Schedule estimates for each alternative. Estimate the start, midpoint and completion dates.

- B. The purpose of the predesign is to explore alternatives. If there are no viable alternatives to the preferred alternative, contact an [OFM capital budget analyst](#) for approval.

4. Detailed Analysis of Preferred Alternative

- A. Describe the preferred project alternative in detail, including the following:
 - i. Nature of space – how much of the proposed space will be used for what purpose (i.e., office, lab, conference, classroom, etc.)
 - ii. Occupancy numbers.
 - iii. Basic configuration of the building, including square footage and the number of floors.
 - iv. Space needs assessment. Compare the project space needs to currently recognized space planning guidelines, such as DES’s Space Allocation Guidelines or the Facilities Evaluation and Planning Guide for four-year higher education facilities. Identify the guidelines used. OFM will provide new space use policy guidance in July 2016.

- B. Site analysis
 - i. Identify site studies that are completed or under way. (Provide upon request.)
 - ii. Provide the following:
 - a) Location.
 - b) Building footprint and its relationship to adjacent facilities and site features. Provide an aerial view, sketches of the building site, and basic floorplans.
 - c) Stormwater requirements.
 - d) Ownership of the site and any acquisition issues.
 - e) Easements and setback requirements.
 - f) Potential issues with the surrounding neighborhood, during construction and ongoing once operational.
 - g) Utility extension or relocation issues.
 - h) Potential environmental impacts:
 - (i) Green space and natural amenities that need to be preserved or accorded special treatment;
 - (ii) Required or potential site mitigation, including history of possible contamination;
 - (iii) Wetlands and shoreline impacts, including a wetlands delineation and the need to fill wetlands;
 - (iv) Shoreline jurisdiction issues;
 - (v) Requirements for the State Environmental Policy Act, National Environmental Policy Act, or an environmental impact statement;
 - (vi) Other regulatory requirements, such as hydraulic project approval and U.S. Army Corps of Engineers permits.
 - i) Parking and access issues, including improvements required by local ordinances, local road impacts and parking demand.
 - j) Impact on surroundings and existing development with construction lay-down areas and construction phasing.

C. Identify whether the proposed project is consistent with applicable long-term plans (such as the Thurston County and Capitol Campus master plans and agency or area master plans) as required by [RCW 43.88.110](#).

D. Consistency with other laws and regulations

Provide documentation that indicates the preferred option is consistent with the following:

- i. High-performance public buildings ([Chapter 39.35D RCW](#)). All state-funded buildings 5,000 square feet or more are required to be designed, constructed, and certified to at least a LEED silver standard.
- ii. Greenhouse gas emissions reduction policy ([RCW 70.235.070](#)), including consideration of:
 - (a) The state's limits on the emissions of greenhouse gases established in [RCW 70.235.020](#);
 - (b) Statewide goals to reduce annual per capita vehicle miles traveled by 2050, in accordance with [RCW 47.01.440](#), except that the agency shall consider whether project locations in rural counties, as defined in [RCW 43.160.020](#), will maximize the reduction of vehicle miles traveled; and
 - (c) Applicable federal emissions reduction requirements.
- iii. Archeological and cultural resources ([Executive Order 05-05](#) and [Section 106 of the National Historic Preservation Act of 1966](#)). Consult with the Department of Archaeology and Historic Preservation (DAHP), the Governor's Office of Indian Affairs (GOIA), and affected Tribes, as appropriate. A letter from DAHP on the impact of potential sites on cultural resources must be included as an appendix.
- iv. Americans with Disabilities Act implementation ([Executive Order 96-04](#)).
- v. Compliance with planning under [Chapter 36.70A RCW](#), as required by [RCW 43.88.0301](#).
- vi. Information required by [RCW 43.88.0301\(1\)](#).
- vii. Other codes or regulations.

E. Identify problems that require further study (for example, environmental contaminants, traffic studies, or IT or other infrastructure challenges). Evaluate identified problems to establish probable costs and risk.

F. Identify significant or distinguishable components, including major equipment and ADA requirements in excess of existing code.

G. Identify planned IT systems that affect the building plans. Coordinate IT requirements with the Office of the Chief Information Officer (OCIO), including completion of a conceptual review. Some projects may also be subject to oversight by the OCIO and the Technology Services Board. See [RCW 43.88.092](#), and for higher education, see [RCW 43.105.205](#).

H. Describe planned building commissioning to ensure systems function as designed.

I. Describe any future phases, plans or other facilities that will affect this project.

J. Project management and delivery method alternatives considered

- i. Identify the proposed project delivery method, such as design-build, phased construction, general contractor/construction manager (GC/CM), or conventional design/bid/build. Justify the proposed method of project delivery, and link the justification for using GC/CM to the requirements in [RCW 39.10.340](#).

- ii. Describe how the project will be managed within the agency:
 - (a) Identify roles and responsibilities for the project.
 - (b) Identify in-house staffing requirements for the proposed project.
 - (c) Identify consultant services, DES resources, or additional staff needed to manage the project.

K. Schedule

- i. Provide a high-level milestone schedule for the project, including key dates for budget approval, design, bid, acquisition, construction, equipment installation, testing, occupancy, and full operation.
- ii. Incorporate value-engineering analysis and constructability review into the project schedule, as required by [RCW 43.88.110\(5\)\(c\)](#).
- iii. Describe factors that may delay the project schedule, such as an environmentally sensitive location, possible presence of archaeological or historical assets, or possible contamination of the site or buildings undergoing renovation.
- iv. Describe the permitting or local government ordinances or neighborhood issues (such as location or parking compatibility) that could affect the schedule.
- v. Identify when the local jurisdiction will be contacted and whether community stakeholder meetings are part of the process.

5. Project Budget Analysis for the Preferred Alternative

A. Cost estimate

Provide the following:

- i. Major assumptions used in preparing the cost estimate.
- ii. Summary table of Uniformat II Level 2 cost estimates.
- iii. The [C-100](#) in Excel (entering information in the CBS Cost Estimator, CBS 003, is no longer required).

B. Proposed funding

- i. Identify the fund sources and expected receipt of the funds.
- ii. If alternatively financed, provide the projected debt service and fund source. Include the assumptions used for calculating finance terms and interest rates.

C. Facility operations and maintenance requirements

- i. Define the anticipated impact of the proposed project on the operating budget for the agency or institution. Include maintenance and operating assumptions (including FTEs).
- ii. Show five biennia of capital and operating costs from the time of occupancy, including an estimate of building repairs, replacement, and maintenance.

D. Furniture, fixtures, and equipment

Clarify whether furniture, fixtures, and equipment are included in the project budget. If not included, explain.

6. Predesign Appendices

- A. Completed Life Cycle Cost Model.
- B. A letter from the Department of Archaeology and Historic Preservation on the impact of potential sites on cultural resources.

SECTION 3: PREDESIGN MANUAL APPENDICES

A. Predesign Checklist

B. Glossary

APPENDIX A: PREDESIGN CHECKLIST

A predesign should include the content detailed here. OFM will approve limited scope predesigns on a case-by-case basis.

❖ Executive Summary

❖ Problem Statement, Opportunity or Program Requirement

- Identify the problem, opportunity or program requirement that the project addresses and how it will be accomplished.
- Identify and explain the statutory or other requirements that drive the project's operational programs and how these affect the need for space, location or physical accommodations. Include anticipated population projections (growth or decline) and assumptions.
- Explain the connection between the agency's mission, goals and objectives; statutory requirements; and the problem, opportunity, or program requirements.
- Describe in general terms what is needed to solve the problem.
- Include any relevant history of the project, including previous predesigns that did not go forward to design or construction.

❖ Analysis of Alternatives (including the preferred alternative)

- Describe all alternatives that were considered, including the preferred alternative. Include:
 - A no action alternative.
 - Advantages and disadvantages of each alternative. Please include a high-level summary table with your analysis.
 - Cost estimates for each alternative.
 - Provide enough information so decision makers have a general understanding of the costs.
 - Complete [OFM's Life Cycle Cost Model \(RCW 39.35B.050\)](#).
 - Schedule estimates for each alternative. Estimate the start, midpoint, and completion dates.

❖ Detailed Analysis of Preferred Alternative

- Nature of space – how much of the proposed space will be used for what purpose (i.e., office, lab, conference, classroom, etc.)
- Occupancy numbers.
- Basic configuration of the building, including square footage and the number of floors.
- Space needs assessment. Identify the guidelines used.
- Site Analysis
 - Identify site studies that are completed or under way.
 - Location.

- Building footprint and its relationship to adjacent facilities and site features. Provide an aerial view, sketches of the building site, and basic floorplans.
- Stormwater requirements.
- Ownership of the site and any acquisition issues.
- Easements and setback requirements.
- Potential issues with the surrounding neighborhood, during construction and ongoing.
- Utility extension or relocation issues.
- Potential environmental impacts.
- Parking and access issues, including improvements required by local ordinances, local road impacts, and parking demand.
- Impact on surroundings and existing development with construction lay-down areas and construction phasing.
- Consistency with applicable long-term plans (such as the Thurston County and Capitol Campus master plans and agency or area master plans) as required by [RCW 43.88.110](#).
- Consistency with other laws and regulations
 - High-performance public buildings ([Chapter 39.35D RCW](#)).
 - Greenhouse gas emissions reduction policy ([RCW 70.235.070](#)).
 - Archeological and cultural resources ([Executive Order 05-05](#) and [Section 106 of the National Historic Preservation Act of 1966](#)).
 - Americans with Disabilities Act implementation ([Executive Order 96-04](#)).
 - Compliance with planning under [Chapter 36.70A RCW](#), as required by [RCW 43.88.0301](#).
 - Information required by [RCW 43.88.0301\(1\)](#).
 - Other codes or regulations.
- Identify problems that require further study. Evaluate identified problems to establish probable costs and risk.
- Identify significant or distinguishable components, including major equipment and ADA requirements in excess of existing code.
- Identify planned IT systems that affect the building plans.
- Describe planned commissioning to ensure systems function as designed.
- Describe any future phases or other facilities that will affect this project.
- Identify and justify the proposed project delivery method. For GC/CM, link to the requirements in [RCW 39.10.340](#).
- Describe how the project will be managed within the agency.

- Schedule
 - Provide a high-level milestone schedule for the project, including key dates for budget approval, design, bid, acquisition, construction, equipment installation, testing, occupancy, and full operation.
 - Incorporate value-engineering analysis and constructability review into the project schedule, as required by [RCW 43.88.110\(5\)\(c\)](#).
 - Describe factors that may delay the project schedule.
 - Describe the permitting or local government ordinances or neighborhood issues (such as location or parking compatibility) that could affect the schedule.
 - Identify when the local jurisdiction will be contacted and whether community stakeholder meetings are a part of the process.

❖ **Project Budget Analysis for the Preferred Alternative**

- Cost estimate
 - Major assumptions used in preparing the cost estimate.
 - Summary table of Uniformat Level II cost estimates.
 - The [C-100](#). If project costs are outside the C-100 cost control range, explain.
- Proposed funding
 - Identify the fund sources and expected receipt of the funds.
 - If alternatively financed, provide the projected debt service and fund source. Include the assumptions used for calculating finance terms and interest rates.
- Facility operations and maintenance requirements
 - Define the anticipated impact of the proposed project on the operating budget for the agency or institution. Include maintenance and operating assumptions (including FTEs).
 - Show five biennia of capital and operating costs from the time of occupancy, including an estimate of building repair, replacement, and maintenance.
- Clarify whether furniture, fixtures, and equipment are included in the project budget. If not included, explain.

❖ **Predesign Appendix**

- Completed [Life Cycle Cost Model](#).
- A letter from the Department of Archaeology and Historic Preservation.

APPENDIX B: GLOSSARY

Acquisition – This type of project includes the acquisition of land, structures and buildings. These are fixed assets that have no relationship to the addition or improvement to, or the repair or replacement of, existing fixed assets. Examples of an acquisition are the purchase of a tract of land or a building.

Alternate Financing – Proposals that cover a wide range of financial contracts that call for the development or use of space by state agencies through a contractual arrangement with a developer or financing entity. Financing may involve the sale of debt obligations (certificates of participation, or COPs, through the State Treasurer) or funding from a private developer. Title to the property involved may transfer to the state either upon exercise of an option or at the termination of the contract.

Constructability Review – An independent consultant or contractor determines if a project can be physically built as designed. This is to reduce construction change orders and claims. This review should be conducted at 75–95 percent completion of the construction documents.

Construction Management (CM) – Involves a contractual arrangement in which an owner employs an agent/consultant called a construction manager to coordinate and manage all the construction trades. The additional management expertise is usually used on larger, more complex construction projects. However, an owner on a smaller project may acquire a construction manager for his or her construction expertise to act as the “eyes and ears” for the owner on the project.

Consultant – A person or entity which provides advice or services to an agency/institution.

Contractor – A person, firm or corporation who or which, in the pursuit of an independent business undertakes or submits a bid to construct, alter, repair, add to, subtract from, improve, move or demolish any building, excavation or other structure, project, development or improvement attached to real estate or to do any part thereof.

Design/Bid/Build – A method of project delivery subject to provisions in Chapter 39.04 RCW in which the agency/institution contracts directly with a single entity responsible for the design of a project and competitively bids the construction services for the construction project.

Design/Build – A method of project delivery subject to provisions in Chapter 39.10 RCW in which the agency or institution contracts directly with a single entity that is responsible for both design and construction services for a construction project.

Facility – A structure with walls and a roof.

Furniture, Fixture and Equipment (FF&E) – The moveable furniture, fixtures or equipment that require no permanent connection to utilities or to the structure.

General Contractor – A contractor whose business operations require the use of more than two unrelated building trades or crafts whose work the contractor will superintend or do in whole or in part. A general contractor does not include an individual who does all work personally without employees or other specialty contractors as defined in this glossary. The terms “general contractor” and “builder” are synonymous.

General Contractor/Construction Manager (GC/CM) – A firm with which an agency or institution has selected and negotiated a guaranteed maximum allowable construction cost for a project. A competitive selection process is used through formal advertisement and competitive bid to provide services during the design phase that may include life cycle cost design considerations, value engineering, scheduling, cost estimating, constructability and alternative construction options for cost savings and sequencing of work. The GC/CM acts as the construction

manager and general contractor during the construction phase. The GC/CM process is subject to provisions in Chapter 39.10 RCW.

LEED Silver Standard – The U.S. Green Building Council leadership in energy and environmental design green building rating standard, referred to as silver standard.

Life Cycle Cost – The capital and operational cost of a construction item, system or building during its estimated useful life.

Master Plan – A document setting forth the concepts and guiding principles for development of campus facilities, landscaping and infrastructure.

Midpoint of Construction – Date midway between the commencement date and substantial completion date.

Operations and Maintenance (O&M) Costs – The costs of the regular custodial care and repair, annual maintenance contracts, utilities, maintenance contracts and salaries of facility staff performing O&M tasks. The ordinary costs required for the upkeep of property and the restoration required when assets are damaged but not replaced. Items under O&M include the costs of inspecting and locating trouble areas; cleaning and preventive work; replacement of minor parts; power; labor; and materials. O&M work is required to preserve or restore buildings, grounds, utilities and equipment to their intended running condition so they can be effectively used for their intended purpose.

Phased Construction – Construction that is split into multiple phases due to fund availability and/or occupancy issues, such as completing a renovation in an occupied building.

Project Budget – The sum established by the agency/institution that is available for the entire project, including the construction budget; acquisition costs; costs of furniture, furnishings and equipment; and compensation for professional services and all contingencies.

Project Delivery System – Method of how an owner plans to contract a project, such as design/bid/build, design/build, GC/CM, etc.

Unifomat – A system for classifying building products and systems by functional subsystem, such as substructure, superstructure or exterior closure.

Value Engineering (VE) – VE is a systematic, orderly approach to defining a facility's required function, verifying the need for the function and creating alternatives for providing the function at minimum life cycle cost. Value is the lowest life cycle cost to achieve the required function. VE is a problem-solving system that emphasizes the reduction of cost while maintaining the required quality and performance of the facility.

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