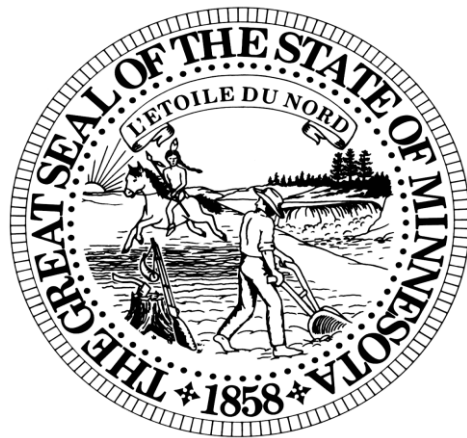




PREDESIGN MANUAL

For

Capital Budget Projects



Seventh Edition – July 2019

CERTIFICATION SIGNATURES

Due to the complexities involved in major capital undertakings, State Agencies and local government units

that are undertaking or sponsoring a Predesign are encouraged to retain the experience of an Architectural or Engineering Design firm to assist in the process. This expertise will provide overall coordination and interpretation of information for translation into the full scope and cost of a project.

When the final predesign document is submitted to the Commissioner of Administration, the signature of the licensed architect or engineer should accompany the document.

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly registered _____ARCHITECT or ENGINEER_____ under the laws of the
State of Minnesota

Date: _____ Registration Number _____

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INTRODUCTION

APPLICABILITY

Minnesota Statute §16B.335 is the state law requiring the preparation and submittal of a predesign for capital projects that receive funding from the State of Minnesota. This applies to any public entity (state agency, university, state colleges, county, city,) receiving any amount of state funding.

Predesign is an integral part of the state's Capital Budget System process. During the Predesign process, the state agency or other public entity undertaking the predesign will need to work with the Department of Minnesota Management and Budget (MMB) to submit their Capital Budget Request for funding. MMB posts their Capital Budget Instructions and information on their website at: <http://mn.gov/mmb/budget/capital-budget/>

As the initial step, prior to undertaking a predesign, you need to determine if your project is exempt from the predesign requirement. Minnesota Statute §16B.335 defines the requirement for predesign as follows:

1. A state agency: A predesign is required if the *construction cost* is **greater than \$750,000** (Also see MN Statute §16B.33 for designer selection requirement). This is also applicable to the University of Minnesota and Minnesota State Colleges and Universities.
2. A local government unit: A predesign is required if any amount of state funding is to be used, and the project *construction cost* is **greater than \$1,500,000**.
3. A local government unit: A predesign is not required for capital projects for park buildings owned by a local government unit in the metropolitan area defined in section [473.121, subdivision 2](#).
4. All funding recipients: Minnesota Statute §16B.335 Subdivision 1(b) also lists numerous project types that are exempt from predesign submittal. To verify if your project is exempt, go to: <https://www.revisor.mn.gov/statutes/?id=16B.335>

As of the date of this predesign manual, capital projects exempt include demolition or decommissioning of state assets, hazardous material projects, utility infrastructure projects, environmental testing, parking lots, parking structures, park and ride facilities, bus rapid transit stations, light rail lines, passenger rail projects, exterior lighting, fencing, highway rest areas, truck stations, storage facilities not consisting primarily of offices or heated work areas, roads, bridges, trails, pathways, campgrounds, athletic fields, dams, floodwater retention systems, water access sites, harbors, sewer separation projects, water and wastewater facilities, port development projects for which the commissioner of transportation has entered into an assistance agreement under section [457A.04](#), ice centers....

Appendix 4C contains other State Statutes that apply to capital projects and predesign requirements.

A glossary of terms used in this document is at the back of this manual.

To obtain a MS Word version of a predesign template and forms go to:

<http://mn.gov/admin/business/vendor-info/construction-projects/Guidelines/predesign.jsp>

For questions regarding this document, contact Eric Radel at the Department of Administration at 651-201-2380; email: eric.radel@state.mn.us

SUMMARY

Pre-design is the planning activity and documentation required to sufficiently identify the cost, scope and schedule of a capital project before large sums of money are invested. Since all subsequent decisions on the development of the project will be founded in the pre-design; it requires the full engagement and support from management.

Pre-design defines the design problem to be solved. Design solves the problem.

Benefits of Pre-design

- Identifies project needs and costs.
- Provides more complete information for making better informed decisions. A pre-design will communicate essential project objectives with factual data before the actual design process commences or other decisions are made.
- Provides an opportunity to discover alternatives that had not been previously considered.
- Identification of potential cost savings.
- Identification and minimization of risks associated with the project.
- Provides agency management with the information they need so as to effectively communicate project details to legislators and stakeholders.
- Analysis of the best construction delivery method.
- Analysis of funding alternatives best suited for the project.
- Provides a basis for a Request For Proposal (RFP) for design services and in negotiating the future design contract.
- Provides instructions to the future architectural and engineering design firms and gives them the foundation on which to base their design.
- Provides the road map for future development of the project. And serves as the source for future decision making during the development.

The following section of this manual lists the components of pre-design; these components are to comprise the body of a Pre-design document and are addressed in detail within this manual. Additionally, the final Pre-design document shall be structured with each component labeled and tabbed.

“Plans are worthless; but planning is everything.” Dwight D. Eisenhower

“By failing to prepare, you are preparing to fail.” Benjamin Franklin

“You win not by chance, but by preparation” Roger Maris

“If you don’t know where you are going, you’ll end up somewhere else.” Yogi Berra

OUTLINE OF THE CONTENTS OF A PREDESIGN

Briefly, an outline of the components of predesign are shown below:

1. A Predesign Summary Statement:

- A paragraph that clearly summarizes the scope of work, the cost plan, and the anticipated project schedule.
- A “*Building Project Data Sheet*”
- For existing building remodelings, also include the “*Building Audit*” Sheet

2. Project Background Narrative:

- Brief narrative on the background to the project.
- Summary of Agency’s Mission, Strategic Plan, and Operational Program that provide the need for the project.
- Statutory requirements that drive the project’s operational program.
- Summary of the agency’s needs analysis.

3. Agency / Organization Planning

- Agency Organizational Diagrams and Charts for the project
- Comprehensive Planning, Technology Needs, Stakeholders, Impacts

4. Project Description:

- Architectural/engineering program
- Space Needs Inventory Sheets
- Space Adjacency and Space Organization Diagrams
- Precedent studies of like projects and the elements to be incorporated
- Technology Plan (See Technology Checklist)
- Sustainability, Energy Conservation, Carbon Emissions reduction
- Operations and Maintenance Requirements
- Statute Requirements
- Specialty Requirements
- Project Procurement and Delivery
- Project Design Services and other Owner costs
- Quality Control Plan

5. Site Selection and Analysis

6. Financial Information – Capital Expenditures:

- Proposed project cost plan (initial capital cost). (Forms are located Section 6)
- Estimate of project impact on the organization’s operating budgets (state agencies). (Form is located in Section 6)
- Summary of proposed operating revenues and expenditures (nonstate agencies and grants).

7. Schedule Information:

- Proposed project schedule.
- Proposed funding sequence if applicable.

CONTEXT FOR PREDESIGN

WHAT COMES BEFORE PREDESIGN

Agency planning precedes predesign: Agency planning that precedes predesign is not bondable because it is not project specific. After agency planning, the project process has three bondable stages:

- Predesign (including Site Selection).
- Design.
- Construction.

DESIGN STAGE DEFINITION

Design follows predesign. Predesign defines the design problem to be solved. Design solves the problem. The deliverables of the three stages of the design process are described below:

1. Schematic design:

The results of this stage are:

- Diagrammatic plans and building sections.
- A site layout that satisfies the requirements of existing codes and ordinances and the physical attributes of the site.
- An organization of the space list into two-dimensional plans and three-dimensional stacking diagrams conforming to codes and the requirements of the architectural/engineering program.
- Alternative schemes and a recommended preferred alternative that depict the general relationships of spaces and the relationship of the building(s) to the site.

2. Design Development:

The results of this stage are:

- A site plan that satisfies the requirements of existing codes and ordinances and the physical attributes of the site.
- Building plans, elevations, and sections defining all two- and three-dimensional relationships.
- Building plans, elevations, and sections depicting basic material and physical system selections.

The deliverables of the design development stage are:

- Site plans drawn to scale.
- Plans, elevations, sections, and details drawn to scale depicting all physical systems.
- Perspective drawings or models as required explaining the proposed design.
- Revised outline specifications describing all physical systems including mechanical and electrical systems.
- Updated project cost plan.

3. Contract documents:

The results of this stage are drawing and specifications suitable to be contract documents for the project.

The deliverables of the construction document stage are:

- Certified, detailed drawings and specifications sufficient to bid, buy, and construct the

- project.
 - Certified drawings and specifications that the local code officials will issue a building permit.
 - Detailed cost estimate demonstrating that the work defined by the contract documents can be performed within the project budget.
4. Construction administration:
 - Monitoring of the construction progress, payments and schedule
 - Verifying that the specified products are being installed (shop drawing review)
 - Providing contractors with interpretation of construction documents.
 5. Post-Construction Phase
 - Receive all equipment documentation and record drawings and specifications
 - Review of completed construction prior to 1 year warranty expiration
 - Conduct post-occupancy evaluation (if funding is approved in the appropriation).

WHAT SIGNALS THE END OF PREDESIGN

The boundary between predesign and design is marked by the completion of predesign which provides the instructions to design professionals (the architects and engineers) in a form sufficient to support commencement of schematic design. It provides the cost parameters that the designers will need in preparing their plans and specifications.

WHAT IS THE RELATIONSHIP OF PREDESIGN TO THE FIRST MAJOR FUNDING

From the view point of the requesting agency, the question is: “What is the earliest time that it makes sense to ask for capital funding for a project?” From the view point of the Legislature, the question is: “When can we understand the proposed project well enough so that an informed decision by the governor and legislature can be made?”

A capital budget request can be made before predesign or it can be deferred until predesign is complete. Not all projects with a completed predesign will be funded for design and construction. Nevertheless, the results of predesign provide essential information to elected officials and stakeholders while minimizing cost to the requesting agency. This information forms the basis for a decision whether a project should receive additional funding for design and construction.

WHAT IS THE ROLE OF PREDESIGN AS DEFINED BY THE LAW

Minnesota Statute §16B.335, Subdivision 3, requires the results of predesign to be submitted to the Department of Administration before commencing design. The Department of Administration will review the results and the entity receiving the appropriation or grant is required to make a written recommendation to the legislative committee chairs and members specified in the statute.

The Department of Administration will examine the predesign results for completeness before performing its review.

WHAT IS THE ROLE OF PREDESIGN AFTER FUNDING IS OR IS NOT RECEIVED

For projects that will be owned by the State of Minnesota, Minnesota Statute §16B.33, Subdivision 3 requires that the State Designer Selection Board (SDSB) select the primary designer for the project when the estimated construction cost is greater than \$2,000,000 or for a planning project with estimated fees of

\$200,000 or greater. The originating agency must make a written request to the Commissioner of Administration, who will forward the request to the Board. More information can be found on the SDSB website at: <http://mn.gov/admin/government/construction-projects/sdsb/>

If the project does not receive funding and the requesting agency or other public entity intends to request funding for the project in the next capital bonding session, the predesign should be retained, updated and resubmitted to the Commissioner of Administration.

EXECUTION OF PREDESIGN

WHO PERFORMS PREDESIGN

Due to the complexity of issues, elements and systems that make up a modern building, or other capital improvement, it is recommended that an agency retain qualified architectural and engineering consultants to perform the bulk of the predesign. A multidiscipline team should be considered where the project is particularly complex. The agency proposing the project will be responsible for providing information on their statutory requirements, strategic plan, operational program and anticipated changes in their operating costs.

The final predesign study is submitted by the agency or other entity requesting funds, not the consultant, if any, preparing the report. Regardless of the number of entities utilized to prepare the overall report, *the requesting agency, or other entity, is responsible for insuring that individual sections have been coordinated and are consistent.* Consequently, it is incumbent upon agency personnel to carefully review and approve the complete report before sending it outside of the agency for any review, approval, or any other use.

COST OF PREDESIGN

For most projects, the target cost for predesign would be one-quarter to one-half of one percent of the construction cost. Higher percentages have been observed due to the relative size and complexity of the anticipated project. Achieving these cost ranges is also dependent on the agency completing its preliminary planning on their strategic and operational plans before undertaking predesign; and, costs can vary depending upon the project needs and the expertise required; for instance, specialty consultant designers may be needed to accurately identify the needs and costs for bio-hazard labs, maximum security prisons, Data Center Tier Level design, Historic Preservation, or Food Service.

HOW PREDESIGN IS PAID FOR

Predesign qualifies for funding by capital appropriation in a bonding bill. If the agency is unable to await a capital appropriation, then the agency may perform the predesign using its own operating funds.

Grant recipients who are required to provide matches for state funds are encouraged to include the cost of predesign within their match portion.

RESULTS OF PREDESIGN

The main result of predesign is a clear definition of a project plan that, if implemented, will meet all project objectives. The project plan is a reconciliation of the agency's operational needs with project financial planning, scheduling, and the requirements of the capital budget legislative process.

Should funding be received for the proposed project, use of the predesign document will continue as the basis for designer selection, terms of the contract with a designer and for the ultimate design and construction of the building.

SUBMITTAL OF PREDESIGN and PROJECT INFORMATION

The template cover letter at the back of this Manual can be used to submit the completed Predesign

document. Prior to beginning construction documents, use the cover letter format in this Manual to submit and notify the applicable committee chairs and members of the Senate and House of Representatives.

CONTENTS OF A PREDESIGN SUBMITTAL

SECTION 1 PREDESIGN SUMMARY STATEMENT

The Predesign Summary Statement will be composed of a project name and usually a brief project description. The predesign summary statement is a description that will stay with the project through its completion and occupancy. The description detail should be expanded as appropriate for each subsequent appropriation request. A Sample Summary Statement follows this section.

- If phasing of the project is being considered, indicate costs and schedules for each phase.
- If matching funds are being requested; indicate the sources and amounts along with the amount of state funding that is being requested.
- If site selection and costs are relevant, include a cost breakdown of these along with the area of the site.
- Total project schedule indicating milestone dates.

Behind the Summary Statement include a completed “*Building/Project Data Sheet*” and/or the “*Building Audit Sheet*” to give a summary description of the proposed building or remodeling.

Although this manual focuses on vertical building construction, if your capital project is not a building, this document will still serve as a guideline for assembling information on the project; the information will just be tailored to sufficiently address the components of the project (scope), cost and schedule.

SECTION 1.A Project (Executive) Summary Statement - Example

MARINE EDUCATION CENTER

SCOPE

WRITER: Do not include non-essential information or go into a lengthy narrative on the need for the project or its background; communicate only what the project is; not what may have been investigated or may be desired; or information on the process. If project is not a building, edit this section to describe the elements and metrics of the project.

This project is to support the mission of the Zoo to “strengthen the bond between people and the living earth,” according to the Zoo’s mission statement.

The improved facility will include new pools for six dolphins along with isolation and neonatal pools, two regular and three wet classrooms, an indoor dolphin theater with a 1,500 person seating capacity, eight shark exhibits, and a reception area for 300 people with adjacent catering kitchen for revenue generating events.

COSTS

New space (new construction):
46,000 gsf Estimated construction Cost: \$15.00 million

Remodeled space:
4,200-5,700 gsf Estimated construction cost: \$2.500 million

Total Estimated construction cost: \$17.500 million

Estimated Total Project Cost: \$20.50 million (all costs associated with the project)

FUNDING SOURCE(S)

State Funding Request: \$9.00 million
Sources for Remainder of Funding:
Friends of the Zoo: \$1.500 million
Federal Grant: \$10.00 million

OPERATING COSTS

An anticipated \$847,000 in increased operating expenses will be funded by the Zoo’s Special Revenue Fund upon project completion in FY 2024.

SCHEDULE

Funding: Estimated July 2020
Site Acquisition: July 2020 to January 2021 (7 months)
Design: January 2021 to November 2021 (11 months)
Bidding & Award: March 2022 to May 2022 (3 months)
Construction: June 2022 to September 2023 15 months)
Occupancy: December 2023

For the purpose of providing a general summary of the proposed building or project, complete the Building/Project Data Sheet – Section 1.B and/or the Building Audit Sheet – Section 1c, and insert behind the Summary Statement.

SECTION 1.B Project Data Sheet – New Building (or New Work)

(include behind the Project Summary Narrative) **If project is not a building, edit this section to describe the elements and metrics of the project.**

Name of Project:
Agency/Organization:

Project/Building Location:

Building Occupancy Type: [if not a building, provide code information that classifies the structure]
Primary Space Types:
Type of Construction:

Building Size [if not a building, list the major elements and provide metric measurements of their sizes]

Number of Stories:
Square Feet per Floor:
Total Square Feet:
Space Efficiency: Usable v. Circulation/Mechanical etc.
Office Space: Gross Sq. Ft. per person: Typical Work Station Size:
Building Cost: \$

Site Size: Number of Acres:

Parking:

Type (surface or structured): Number of Stalls:
Area of Parking: Parking Ramp Cost: \$ Total \$ per stall

Roofing Type: [list the major elements of the project and provide metrics on their sizes]

Exterior Wall Type:
Interior Wall Type:
Structural System Type:
Mechanical System Type:
Fire Protection Description:
Electrical System Type:
Technology Systems:
Life Expectancy of New Work:

Costs: [list the costs of all components that comprise the total budget]

Total Project Cost: Furniture, Fixtures, Equipment, Signage:
Predesign Cost: Relocation Cost: (not bondable)
Design Cost (including B3 sustainability): Phasing Cost:
Site Acquisition Cost: Technology Cost:
Site Improvements Cost: Commissioning (req'd for B3):
Parking Structure Cost:
Building Cost:
Hazardous Materials Abatement Cost:
Surface Parking Cost:
State Funding amount: Other Funding Source(s) Amount(s):

NOTE: Cost Estimates are based upon the information above

SECTION 1.C

Building Audit Sheet –Existing Building Data **INDICATE BOTH EXISTING AND PROPOSED CONDITIONS** (include behind the Project Summary Narrative)

Name of Project:
Agency/Organization:
Building Location:

Building Occupancy Type (Existing):
Primary Space Types:
Type of Construction:

Building Size
Number of Stories:
Square Feet per Floor:
Total Square Feet:
Space Efficiency: Usable v. Circulation/Mechanical etc.
Office Space: Gross Sq. Ft. per person:
Typical Work Station Size:
Remodeling Cost: \$

Site Size: Number of Acres/ square feet

Parking:
Type (surface or structured): Number of Stalls:
Area of Parking: Parking Ramp Cost: \$ Total \$ per stall

Roofing Type & Condition:
Exterior Wall Type (s) & Condition:
Interior Wall Type(s):
Structural System Type & Condition:
Hazardous Material Removal & Cost
Mechanical System Type & Condition:
Fire Protection Type & Condition:
Electrical System Type & Condition:
Technology Systems & Conditions:

Costs:
Total Project Cost: Furniture, Fixtures, Equipment, Signage:
Predesign Cost: Relocation Cost: (not bondable)
Design Cost (including B3 sustainability): Phasing Cost:
Site Acquisition Cost: Technology Cost:
Site Improvements Cost: Commissioning (req'd for B3):
Parking Structure Cost:
Building Cost:
Hazardous Materials Abatement Cost:
Surface Parking Cost:
State Funding amount: Other Funding Source(s) Amount(s):

NOTE: Cost Estimates are based upon the information above

SECTION 2 BASIS FOR NEED – PROJECT BACKGROUND NARRATIVE

This section of the predesign submittal describes and justifies the need for the project. A project must be

justified based on carrying out the mission, strategic plan, and operational program. During the predesign process, the agency undertaking predesign will need to gather and summarize their MISSION, STRATEGIC PLAN, and OPERATIONAL PLAN to demonstrate the connection and need of their proposed project.

The information to be included in this Section includes:

1. Summary of the requesting agency's/organization's own approved mission, strategic plan and operational program that are tied to the project. And a clear summary statement of how the project will assist in meeting and furthering the mission, strategic, and operational plans of the agency or institution.
2. The requesting agency/organization provides the operational program to be supported by the project. This is to include statutory or rule requirements that drive the operational program. This listing should focus on the legislation that supports or demands the development of the project either directly or in the form of the creation of programs requiring physical accommodations. This is an opportunity to indicate the effect of expanding programs, sentencing guidelines, or other directives creating the need to provide appropriate facilities. The program should clearly identify the basic elements of what is, what will be done, how, to whom, by whom, with what in terms of resources, and the results anticipated. This summary should not record physical facility requirements.
3. Before building new space, the requesting Agency or Organization provides an analysis that results in identifying the physical needs for the project.

Analysis of Alternatives: The analysis and planning process should define alternative ways that were considered to meet the project's operational program requirements. Alternatives may include using existing space, adapting existing space, new construction, or leasing space. Collocation with other agencies must also be considered and a determination made and explained. When alternatives have been defined, conduct an analysis and summary of alternatives to meet the project's operational program and service delivery requirements. A preferred alternative should be selected that maximizes program suitability and **minimizes first cost and life of the program costs**. Include clear explanation of the thought process and criteria used to select the preferred alternative. The nature and breadth of participation by user groups within the organization should be clearly indicated.

When surveying its space inventory, the requesting agency should answer two questions:

- Is existing space available to meet the program requirements? If the answer is yes, then reusing existing space is an alternative way to satisfy the program requirements.
 - Is existing space, worthy of reinvestment, available for adaptation to meet the program requirement? If the answer is yes, then adapting existing space should also be considered an alternative way to satisfy the program.
4. When the project involves renovation of an existing facility, along with the predesign, the agency/organization shall conduct:
 - a. FACILITY CONDITION ASSESSMENT (FCA) to assist in determining the replacement and upgrade needs of the existing building and all of its systems (structural, mechanical, electrical, civil systems).
 - b. HAZARDOUS MATERIAL SURVEY to determine the scope and costs of abatement.
 - c. Any other studies, environmental assessments, or other pertinent information.

SECTION 2.A

Sample of BASIS FOR NEED – PROJECT BACKGROUND NARRATIVE

NOTE: THIS SAMPLE IS HYPOTHETICAL and is for the purpose of demonstrating the appropriate information to be provided.

The mission of Minnesota Zoo is *to connect people, animals, and the natural world*. Modern exhibits provide exciting experiences with animals and their habitats introducing guests to species from around the globe. Education programs engage audiences at the Zoo, throughout the region, and around world. Conservation programs protect endangered species and preserve critical ecosystems.

The current demographics and operations of the Minnesota Zoo are:

Animal species: 504 Individual animals: 2,961

Births at the Zoo: 246

23 Species Survival Plan (SSP) species

Members Households 44,233

Guests: 1,355,260

Education program participants: 331,680

Zoomobile participants: 43,570

Volunteers: 1,000

Total operating expense: \$18.7 million

The Strategic Plan for the Minnesota Zoo (if needed, attach full plan in the appendix and reference it here) includes collaboration with National and World organizations for determining exhibits, education, research pertaining to wildlife and their habitat.

The Operational Plan for this project(attach full plan in the appendix and reference it here) is founded in its activities as a member of the Association of Zoos and Aquarium's (AZA's) Species Survival Plan (SSP) Program. The Minnesota Zoo participates in the AZA mission: to help ensure the survival of wildlife species.

The Minnesota Zoo's Species Survival Plan, or SSP, began in 1981 as a cooperative population management and conservation program for selected species at North American zoos and aquariums. Each SSP manages the breeding of a species to maintain a healthy, self-sustaining captive population, both genetically diverse and demographically stable. SSPs include other conservation activities including research, education, reintroduction, and field projects. Currently, there are 113 SSPs covering 181 species.

Basis For Need

Based on current revenue analysis and survey of visitors to the zoo, the most popular exhibits are related to the Species Survival Plan (SSP) and in particular the Aquarium Exhibit. And, last year the American Zoo Association (AZA) notified zoos with SSP programs that they have matching grants available for facility expansions related to endangered species.

The Minnesota Zoo has applied for and received approval for a 1:1 matching grant from the AZA. This grant becomes available when the grantee provides sufficient documentation that they have secured their portion of the grant. This project will consist of the expansion of the Aquarium Exhibit. The Zoo's financial analysis (See Appendix) indicates that the increased revenue from this proposed project will fund the ongoing operations of the additional operating cost incurred by the expansion.

SECTION 3 AGENCY/ORGANIZATION PLANNING

Agency planning is to precede predesign and be documented and incorporated into the predesign submittal document. This Section of information is used as backup documents to support and inform other Sections of

the Predesign. If Agency/Organization planning assistance is needed, this needs to be identified early on so that these services can be procured prior to or as part of the Predesign activities.

Along with the information from Section 2, Agency planning includes:

Comprehensive/Master Plan: Review of area, neighborhood, or campus master plans or other plans that may affect the project: Project decisions should be made with the requirements of existing plans in mind. These plans may include campus or area master plans or other plans prepared and enforced by local levels of government; or masterplans previously prepared by the Agency.

Site Selection: If site selection is needed for the project, the Agency will need to provide identification of potential sites and definition of site selection criteria. Actual site selection should occur before predesign but the predesign should contain information as to why the site was selected based on criteria along with any site information.

Technology and Telecommuting (Remote Work) Plans: Designation of applicable information technology: Before predesign begins, both the type of information technology to be incorporated into the project and the telecommuting plan for the facility should be defined. The desired results of these plans should be determined. For example, questions such as: “What is the effect of telecommuting on the size of full-time, on-site staff?” should be answered. The Technology Plan will require review and written approval from the State’s information technology agency (MN.IT). See Section 4 for technology and telecommuting requirements.

Historic Documentation: If the project is located within a historic district or involves disposal of buildings that are on the National Register of Historic Places, provide all documentation and correspondence for inclusion into the predesign document. If none exists; meet with the State Historic Preservation Office to determine requirements.

Disposal of State-Owned Buildings: If the project involves the disposal or demolition of a State-owned building, the Agency must obtain legislative authority for the disposal or demolition. Contact the Department of Administration’s Real Estate and Construction Services for assistance.

Stakeholders: Provide a list and narrative regarding the stakeholders involved and affected by the project (i.e. other agencies, organizations, and entities).

Impacts: The Agency is to provide a narrative of the impacts the project will have on:

1. Their Operations
2. Their Operational Budget
3. Facility and staff (i.e. include the functional impacts that the facility will need to accommodate during design, construction, relocation, occupancy).

All documents related to the topics above should be placed into the Predesign document under this Section.

SECTION 4 PROJECT DESCRIPTION

4.A ARCHITECTURAL/ENGINEERING (A/E) PROGRAM

Projects for new and remodeling of state offices are to follow the state's "*Space Guidelines*". Current space guidelines are available online at <http://mn.gov/admin/government/construction-projects/manuals-guidelines-forms/index.jsp> Prior to finalizing the predesign document for a state-owned project, the Space Planning group in Real Estate and Construction Services are to review the space program for adherence to the "Space Guidelines".

The architectural/engineering program ("A/E program") compiles instructions to the design professionals. The nature and extent of the instructions required are specific to the project.

Projects that have been built heretofore should not require an original program if the previous work is still applicable. The existing A/E program can be used to direct the design professionals.

On the other hand, unique projects by definition require new instructions to guide the design professionals. If the project is unique but simple and not costly, the A/E program can probably be completed with the predesign work.

At the other end of the spectrum, however, if the project is unique, complex, and relatively costly, then the A/E program should be generally described during the predesign stage and the details added during schematic design. In this case, the capital budget request should include funding for the detailed A/E program with the design work, but should be developed with the constraints established in predesign.

The processes utilized to establish the program should strive to include methodologies that are participatory in nature and strive to establish the greatest client consensus possible. These should be clearly documented as a part of the program document and based upon the State's *Space Guidelines*.

PREDESIGN REQUIREMENTS FOR THE A/E PROGRAM:

The A/E Program provided in the predesign submittal is to include:

- A detailed space program using a table of space names and sizes.
- Space Needs Inventory data sheets for individual rooms (See Appendix 4a template form)
- Adjacency Diagrams showing the activity and functional relationships among the spaces.
- A listing of Furniture/Fixtures/Equipment/signage (FF&E) needs.
- Narrative descriptions of the major Architectural, Civil, Structural, Mechanical, Electrical, and Specialty systems that are part of the proposed project.

Architectural/Engineering (A/E) Program Definitions

1. Types of Programs:

- The Architectural/Engineering program ("A/E program") compiles instructions to the design professionals. The nature and extent of the instructions required are specific to the project.
- Projects that have been built heretofore should not require an original program if the previous work is still applicable. The existing A/E program can be used to direct the design professionals.
- On the other hand, unique projects by definition require new instructions to guide the design professionals. If the project is unique but simple and not costly, the A/E program can probably be completed with the predesign work.
- At the other end of the spectrum, however, if the project is unique, complex, and relatively

costly, then the A/E program should be generally described during the predesign stage and the details added during schematic design. In this case, the capital budget request should include funding for the detailed A/E program with the design work but should be developed with the constraints established in predesign.

- The processes utilized to establish the program shall strive to include methodologies (see participatory programming in Appendix) that establish the greatest client consensus possible using established state space guidelines. These should be clearly documented as a part of the program document.
2. Components of an Architectural/Engineering Program: (Use the “**Programming Methodology for Participatory Design**” and complete the “**Space Needs Inventory**” located in the Appendix 4b of this Section).
- Summary of how the project will meet the requirements of the requesting agency’s strategic plan and operational program for the project.
3. Space/Area Program:
- Summary of existing applicable master plans or other area wide (urban design, architectural, or engineering) plans pertaining to the project.
 - Definition of needs.
 - The A/E program should define human and operational needs to be met by the project.
 - Needs are derived from the operational program, programming interaction with potential users, new or existing research, and standards for architectural/engineering practice. The processes for deriving these needs should be clearly identified and explained.
 - An analysis of collocation opportunities with other agencies.
 - Site selection criteria and site selection recommendations. Agencies must include an analysis of location(s) using the “*Criteria for Locating State Offices and Agencies*” (See Appendix H).
 - If schematic design of alternative solutions is both desired and highly dependent on site characteristics, then final site selection may occur during schematic design and only the selection criteria identified as part of predesign.
 - Facility Condition Audit of existing building’s physical condition. (State Agency Projects)
 - If the project involves modification of an existing building, the conditions to be changed should be recorded. For example, if an existing building needs modifications to meet code requirements for its intended use, then the required improvements should be listed. Design standards, guidelines, and performance characteristics for site and building systems.
 - The performance characteristics of physical components of the project should be described. For example, with respect to heating, ventilation, and air conditioning performance: the inside summer and winter temperatures to be maintained, the acceptable relative humidity range, and the outside fresh air ventilation rate should all be defined.
 - Individual space requirements. See the State’s Space Guidelines. Complete the forms in Appendix N.
 - Size and characteristics of required spaces and rooms should be tabulated.
 - Space and room adjacency requirements should be recorded.
 - Special characteristics of rooms should be recorded.
 - Extracts from the project budget and schedule that may apply to the work by design
 - Bibliography of applicable codes, standards, cited research, and other publications referenced in the program. Current issues as applicable building codes, sun charts, and building air quality guidelines are assumed.
 - If the proposed project is different from similar, well-understood building types, the differences should be highlighted. For example, if administrative offices are proposed to have an unusually high potential for internal layout change, the type of changes expected should be

defined.

- Include the space program in the format of a table with the name of each space along with the square foot area required of each room, each floor and total square feet.
4. Alternatives/Options
 - Develop three options, in bubble diagram format on the site, that will satisfy the program; evaluate each option and select the preferred one. Provide explicit reasons for selecting the preferred option.
 5. Site infrastructure and zoning
 - When the proposed project will be a major renovation or an addition, investigate the site utility infrastructure needs to determine if the existing utilities have the capacity or will meet the current codes to support the proposed project. Verify zoning requirements. When the predesign team has developed the proposed size and location of the project, it is recommended that the predesign team meet with code and zoning officials to obtain information and requirements.
For projects on new sites, see Section 5- Site Analysis and Selection.

4.B PRECEDENT STUDIES

1. Visit and investigate at least two project facilities that are similar to the project that is being proposed in this predesign. Include the following:
 - Brief description and location of the project
 - Significance of the project
 - Description of the successful design features, systems, or elements that will be incorporated into the proposed project.
 - When using terms such as “cutting edge”, or “at the fore-front” describe what makes those facilities “cutting edge” and specifically what will be incorporated into the proposed project to make it “cutting edge”.

4.C TECHNOLOGY PLAN & TELECOMMUNICATIONS PLAN REQUIREMENTS

1. This section of the predesign is for the purpose of identifying and documenting the technology requirements for the project. Provide summary information technology and telecommuting plans to be incorporated into the project: Cost-effective information technology investments and telecommuting plans should be provided that would enable an agency to reduce its need for office space, provide more services electronically, and centralize or decentralize its services.

2. **Technology Guidelines.** For State Agency predesigns, the predesign preparer shall review and “*Technology Guidelines – Building Infrastructure for State Owned Buildings*” (located at: <http://mn.gov/admin/government/construction-projects/manuals-guidelines-forms/index.jsp> Click on “Manuals, Guidelines, and Forms”). The preparer shall work in coordination with the user agency to identify and document the technology needs for the project.

3. **Technology Plan is required.** For State Agency (State-owned) projects, MN Statutes § 16B.335 requires the submittal of the technology plan to the State’s information technology agency (MN.IT) (formerly the Office of Enterprise Technology (OET) for review, comment and approval. A signed response letter from MN.IT is to be included in the predesign. Local Governments may want the predesign preparer to submit a plan to the local government for review to ensure compatibility or

compliance with their technology standards.

Predesign Meeting with MN.IT

For those projects required by statute to have a technology plan, the predesign team and the Department of Administration's Project Manager will notify MN.IT– who will convene a Predesign meeting to determine the agencies needs, goals, timelines and objectives. The Predesign Team will consist of, but will not be limited to:

- Agency/customer
- Department of Administration's Project Manager
- Consultant Technology Designer
- MN.IT Staff

Technology Plan Checklist

For State-owned projects a completed technology checklist is to be included with the predesign submittal.

See the Technology & Telecommunications Checklist in the Predesign Manual.

Because each project has a unique character, MN.IT will address the Technology Plan content to determine approval of the planned approach in the project.

Telecommuting (Remote Workplace) Plan: If your agency has a telecommuting (remote workplace) plan or policy, describe it here.

Minnesota Statues, Section 16E.05, Sub (3) also require state agencies to address and prepare telecommuting plans when proposing capital investments in office space or explain why remote workplace arrangements are not practicable or both.

4.D SUSTAINABILITY, ENERGY CONSERVATION, AND CARBON EMISSIONS

1. Since 2000, Minnesota has developed and refined its requirements for energy conservation and sustainability to be applied to design and construction. Minimum requirements which are mandated by legislation and required to be addressed in the predesign are:

a. **Sustainability and High Performance.** Minnesota Statute § 16B.325 requires that the State's Sustainable Building Guidelines be applied. Include a summary of sustainable design and construction goals in accordance with the "*The State of Minnesota Sustainable Building Guidelines*" (available at <http://www.b3mn.org/guidelines/index.html>)

b. **Solar Heating and Cooling Systems (Minnesota Statute 16B.326).** The project proposer must include a study for geothermal and solar thermal applications as possible uses for heating or cooling for all building projects subject to a predesign review ...that receive any state funding for replacement of heating or cooling systems. When practicable, geothermal and solar thermal heating and cooling systems must be considered when designing, planning, or letting bids for necessary replacement or initial installation of cooling or heating systems in new or existing buildings that are constructed or maintained with state funds. The predesign must include a written plan for compliance with this section from a project proposer. Definition: "solar thermal" means a flat plate or evacuated tube with a fixed orientation that collects the sun's radiant energy and transfers it to a storage medium for distribution as energy for heating and cooling.

The predesign must include a written plan for compliance from the project proposer.

Geothermal (16B.326)

Enter information

Enter Cost/Benefit calculation:

Provide a summary of why/why not a geothermal system will/will not be incorporated into the project.

Solarthermal (16B.326)

Enter information

Enter Cost/Benefit calculation:

Summary: Provide a summary of why/why not a solarthermal system will/will not be incorporated into the project.

c. 2% Solar or Wind (Minnesota Statute 16B.32) -Note: Also required for B3 - Minnesota Sustainable Building Guidelines

New construction or a renovation of 50 percent or more of an existing building or its energy systems must include designs which use active and passive solar energy systems, earth sheltered construction, and other alternative energy sources where feasible.

Subdivision 2: A state agency that prepares a predesign for a new building must consider meeting at least **two percent** of the energy needs of the building from renewable sources located on the building site. For purposes of this subdivision, "renewable sources" are limited to wind and the sun. The predesign must include an explicit cost and price analysis of complying with the two-percent requirement compared with the present and future costs of energy supplied by a public utility from a location away from the building site and the present and future costs of controlling carbon emissions. If the analysis concludes that the building should not meet at least two percent of its energy needs from renewable sources located on the building site, the analysis must provide explicit reasons why not. The building may not receive further state appropriations for design or construction unless at least two percent of its energy needs are designed to be met from renewable sources, unless the commissioner finds that the reasons given by the agency for not meeting the two-percent requirement were supported by evidence in the record.

Solar

Enter information

Enter Cost/Benefit calculation: Calculations should analyze pay-back (return on investment) for the best scenario up to 2%

Summary: Provide a summary of why/why not a PV Solar system will/will not be incorporated into the project.

Wind

Enter information

Enter Cost/Benefit calculation:

Summary: Provide a summary of why/why not a wind generation system will/will not be incorporated into the project.

d. 5% Made in Minnesota PV Solar (Minnesota Statute 16B.323)

A project for the construction or major renovation of a state building, after the completion of a cost-benefit analysis, may include installation of "Made in Minnesota" solar energy systems of 40 kilowatts capacity on, adjacent, or in proximity to the state building (a state building is defined as one that receives state bond proceed funding). The cost of the solar system must not exceed 5% of the appropriation.

40 KW Photovoltaic Solar System

Enter information

Enter Cost/Benefit calculation:

Summary: Provide a summary of why/why not a PV Solar system will/will not be incorporated into the project.

4.E OPERATIONS AND MAINTENANCE REQUIREMENTS

1. This section is for the purpose of identifying:
 - The impact of the project on the agency/organization operations and budget. Input on space and operational needs should be provided by staff who will operate and maintain the building.
 - Documenting and incorporating maintenance requirements
2. Include changes in staffing levels, anticipated expenses for salaries, operations, maintenance, and utilities as a result of the project. These estimates should be amounts that are anticipated over present levels of funding. The predesign should indicate whether the maintenance and operational services are expected to be performed by agency staff or private sector vendors. Use Appendix E to record operating costs.

4.F STATUTE REQUIREMENTS

1. See Applicability of Statute documents. These can be found at [Guidelines / Minnesota.gov \(mn.gov\)](http://Guidelines/Minnesota.gov(mn.gov))

4.G SPECIALTY REQUIREMENTS

1. This Section is for unique requirements related to the project. Project Costs are to take into consideration the special requirements. List these requirements in Section 4G of the body of the predesign or reference that they are bound in an Appendix. Examples of Specialty Requirements include:
 - Department of Health licensing requirements / rules / legislation for Supportive Living Facilities.
 - Laboratory Certification Requirements (i.e. Contamination/ Biohazard Level design requirements).
 - Correctional facility design requirements
 - Assisted living or nursing home design requirements (both federal and state).
 - Hospital design requirements
 - Data Center Tier Level design requirements
 - Acoustical design requirements
 - Humidification controlled environments (Museum, wood instrument storage, etc)
 - Historical Design /National Register of Historical Places. (Archeological Site Surveys, coordination with State Historical Preservation Office (SHPO)
 - Environmental (National Environmental Preservation Act-NEPA, or State Environmental Assessments and/or Environmental Impact Statements).
 - Federal Funding requirements
2. In addition to project specific requirements, all State-Owned/State Agency projects have the following Specialty requirements: (unless otherwise noted, these documents are available at: <http://mn.gov/admin/government/real-estate/manuals-guidelines-forms/index.jsp>)
 - State's "*Design Guidelines*"
 - State's "*Space Guidelines*" (Required for State Agency Projects)

- The Minnesota Sustainable Building Guidelines (B3): <http://www.b3mn.org/guidelines/index.html>
- “*Guide to Minnesota Environmental Review Rules*” <http://www.eqb.state.mn.us/program.html?Id=18107>
- “*Technology Guidelines – Building Infrastructure for State Owned Buildings*”. Include a Technology Plan for the project.
- “*Building Air Quality – A Guide for Building Owners, Facility Managers and Agency Contacts*”. Predesign is to include a summary of Building Environmental Quality design initiatives.
- “*Criteria For Locating State Offices and Agencies*”: Predesigns for State Office facilities shall address and incorporate these criteria.
- “*Contractors/Vendors Guidelines Related To Buildings and Parking Facilities*” For Projects located on the Capitol Complex.
- “*Plant Management Preferred Equipment List*” for projects located on the Capital Complex.
- “*Contractor Security Requirements*” for projects located within a Minnesota Correctional Facility. (Available from the correctional facility).

Additional Considerations

- Security & Vulnerability Assessments – Unless an agency has security expertise, a qualified security consultant should be retained during the predesign process and work in coordination with the predesign team.
- Demolition of State buildings: Legislative Authority is required if the project involves the disposal of a State owned building.
- Hazardous materials survey, design, air monitoring, removal costs.

Note: Unless noted above, the manuals and documents (in italic font), identified above, are available on the Department of Administration’s website (<http://mn.gov/admin/government/construction-projects/manuals-guidelines-forms/index.jsp>) and are to be bound into the predesign submittal appendix.

3. Other specialty requirements that are unique to a specific project are to be identified and incorporated into the predesign and estimated costs.
4. Furniture, Fixtures, and Equipment (FF&E). The new building will need to be equipped with furniture and other non-construction related elements. The agency will need to consider office furniture, office equipment, computers, wall hangings/art (See percent for art in State Buildings), plants, files, signage, directories, video conferencing equipment, conference room projection, etc. The predesign is to include
5. Exterior landscaping and site amenities. Include all costs for landscaping and site amenities that will be part of the project.
 - a. Landscape design fees and amenities (plants, trees, bushes, benches, bike racks, fencing, walkway paving, trash enclosures, fencing).
 - b. Exterior lighting design and construction (parking areas and building areas).
 - c. Exterior signage (design and installation).
6. Finally, if the project includes relocation of existing tenants; these costs need to be included in the total project cost. Costs to be considered are:

- a. Move Consultant (Company that will organize the tenant for the move and assist with bidding)
- b. Move vendor (company that will do the moving)
- c. Swing space lease costs (if tenants will be relocated to another location during construction).

Note: Relocation costs are not bondable. The State Agency will need to develop a general fund request for relocation costs. The consultant predesign team should include a move coordinator to determine the needs and costs of the move(s).

4.H PROJECT PROCUREMENT AND DELIVERY

1. This section describes the proposed method for delivering the project. Options for delivery include: Design-Bid-Build (Low-Bid), Design-Bid-Build (Best Value), Construction Manager at Risk, or Design-Build.
2. The recommended Project Delivery Method is to be accompanied by the reasons it will serve to deliver the project as distinguished from other options.
3. The project cost plan and estimates are to include the costs associated with the recommended delivery method.
4. The predesign shall also contain instructions to future design teams regarding product specifications based on the State's guidelines. All product specifications are to be written to allow multiple manufacturers and suppliers to competitively bid the products. No single product or sole source shall be specified unless formal prior justification and approval are received. For State agency projects there is a formal process for submitting a written request for approval.

4.I PROJECT DESIGN SERVICES AND ADDITIONAL OWNER COSTS

1. This section is for determining the design services required to deliver the project along with additional services the owner/State will need to provide.
2. Carefully consider all of the design services and other owner soft costs that will be needed. The attached Appendix 6 has a comprehensive list of possible design and soft costs that should be considered for the proposed project.
3. Complete the attached Appendix 4d and insert it in the final predesign document.
4. Include these costs in the project budget and financial spreadsheets in Appendix 6

4.J QUALITY CONTROL PLAN

1. Provide the quality control plan outline and a listing of quality control measures that will be incorporated into the project delivery process for the project. Along with code required testing, State Agency projects for new construction, additions and major renovations, are to include the following quality control measures in the project AND project budget:
 - a. Building Envelope Commissioning (design review commissioning and commissioning and inspections during construction).
 - b. Building Envelope Analysis using WUFI software (performed by envelope commissioning agent). <https://wufi.de/en/> Performed during the design phase of the project.
 - c. HVAC and Electrical Systems Commissioning (Design review commissioning and construction commissioning and inspections during construction).
 - d. Specify mock-ups of envelope component systems and pre-installation conferences.
 - e. Specify submittal of a quality control plan by the contractor and subcontractors.
 - f. MN Sustainable Building Guidelines (B3) with SB2030 energy efficient design

- g. Building Information Modeling (BIM) for clash detection.
- h. BIM with interface with Archibus for loading installed equipment.

See Section 6.5 for Risk Mitigation

Section 4 APPENDICES FOLLOW THIS SECTION

APPENDIX 4a – Space Needs Inventory Form

APPENDIX 4b – Programming Methodology for Participatory Design

APPENDIX 4c – Applicable Statutes for State Funded Projects

SECTION 4 – APPENDIX 4b

PROGRAMMING METHODOLOGY For PARTICIPATORY DESIGN

Note: This is one example of a methodology to use during predesign. You may use any methodology and research to achieve the program. The intent is to facilitate space programming to be a team oriented, discovery process leading to a more functional, efficient and habitable design.

A. Goal Setting

1. Organize a programming team.

- The programming team would be made up of the designer and user group representatives. A typical user group would consist of individuals from each department of the organization. (the user group representatives are not the same group as the building committee).
- Obtain the mission statement of the organization, a strategic plan, and operational plan.
- Obtain an organizational chart for the organization.
- Obtain the State's *Space Guidelines*. (*web link is below*)

Crucial Step in the Process: When developing a space program the team and users must focus on job function related needs in conjunction with the State's *Space Guidelines* versus developing a "wish list" of space needs. The guidelines are available at <http://mn.gov/admin/business/vendor-info/construction-projects/Guidelines/design.jsp> . Final approval of the space program will be made by the Department of Administration staff; thus, periodic consultation with the Department of Administration needs to occur during the programming phase of predesign.

2. Chose a Goal Setting methodology

- This is where input from the users is gathered. And where the logic foundation for future decisions is based.
- Organize a workshop, have the user group bring a brainstorm list of goal statements. Discuss goal statements with participants and eliminate any multiple Statements. And then prioritize goals.
- These goals should not be detailed items, but should be comprehensive in nature. Something that would have a system wide affect or application. i.e. Our image should be conveyed as a strong, creative force in our industry. Or, we move workstations every 6 months, so the new environment should be a flexible one to accommodate this.
- Prioritize and produce a final list of six goals to achieve. Balance these against the organization's mission statement, strategic plan and operational plan.
- The program team should then formally submit the project goals to the higher echelon of the organization for approval.
- Include the goal setting documentation in the Predesign Document.

B. Inventory of space

1. Identify each “unit” in the organization.

The designer shall create a space needs inventory form. (See attached example).

- Record the activities performed by each unit and the equipment and space needed to carry out the activity. Include days & times this activity is performed in the space (i.e. time can be important if, for instance, with a code compliance office or sales office where the occupants are out of the office for much of the time.)
- On the inventory form, indicate internal and external interactions that take place.
- Have the user groups list desired objectives for the space. (or develop a questionnaire). i.e. view to exterior, more privacy when in meetings, and closeness to a printer.

2. Evaluate

- Using the completed inventory form and the list of desired objectives, schedule a workshop to discuss and evaluate the requirements for each functional “unit”.
- The designer, using a kits of 1/4” scale models of typical spaces and equipment, will facilitate the workshop in modeling and evaluating various options.
- Summarize conceptual approaches and options resulting from the evaluation.

C. Define & Develop relationships

1. The designer should at this point facilitate two research studies such as:

- Social Mapping
- Behavioral Mapping

Document this research and include in the Predesign Document.

2. Bubble Diagram.

In a workshop, have the participants discuss and diagram relationships of the activities. Include this in the Predesign Document

3. Activity matrix.

After diagramming and determining desired relationships between activities, the designer will develop a matrix showing the relationships.

D. Synthesis

1. Synthesize the information from the mission statement, strategic plan, operational plan, project goals, research, questionnaires, activities inventory, and workshops to develop a program and potentials for design.
2. Include the space program in the format of a table with the name of each space along with the square foot area required.
3. Develop three options, in bubble diagram format on the site, that will satisfy the program; evaluate each option and select the preferred one. Provide explicit reasons for selecting the preferred option.

E. Approval (for State Agency projects)

1. Obtain approval of the space program from the Department of Administration prior to publishing the final predesign document.

SECTION 4 – APPENDIX 4c

SECTION 5 SITE ANALYSIS AND SELECTION

5.1 CRITERIA FOR LOCATING STATE OFFICES AND AGENCIES

1. The Predesign Submittal is required to contain an analysis of location(s) using criteria developed by the Department of Administration for locating state offices and agencies using the “*Criteria for Locating State Offices and Agencies*” (available at <http://mn.gov/admin/business/vendor-info/construction-projects/Guidelines/predesign.jsp>)
2. The agency and their consultant shall be expected to consider and review numerous site options, then recommend, present and include three site options in the final Predesign document for potential development of the project. A preferred option is then identified along with its financial data and cost estimates for development and building of the project.
 - State agencies and their consultant shall work with the Department of Administration’s Real Estate Management to determine potential sites for consideration.
3. There should be an analysis of sub-options of strategies for financing the project.
 - When the proposed project will be large scale, the consultant shall provide financial expertise, experienced in large scale construction funding, to work with the agency and MN Management & Budget Agency to determine cost saving options and delivery methods for funding the construction.
 - The financial options for funding the project are to be integrated in the predesign document and presented with the consultant’s formal submittals.
 - Project cost estimates shall be presented in the State’s Capital Budget format.
4. Issues for each site option, along with photographs shall be maintained . The feasibility of development and construction of the project on each of the three site options shall be presented and integrated into the predesign document. Site selection studies and criteria shall include (but not be limited to):
 - Access by the public client
 - Access by employees
 - Available Transportation
 - Environmental Impact
 - Sustainability
 - Site developmental costs relating to site utilities/infrastructure
 - Parking requirements / costs (Number of stalls/surface parking/structured parking)
 - Phased Development
5. Provide cost estimates for both surface and structured parking for each site being considered
6. Where a site is located and how it functions will impact an organization’s operations and ongoing operational costs. For example: If an organization requires regular shipments and receipts of a product; where and how those shipments/receipts are accommodated on site will affect your operations and your operating costs. Thus, selecting a site for should be accomplished by identifying needs criteria.

The predesign activities include development of selection criteria, analysis of sites that fit the criteria, and recommendation of a preferred site or sites. Initial criteria include:

- Verify specific site restrictions with municipal zoning ordinances. i.e. park ratios, setbacks, rights-of-ways, need for retention ponds, locations of easements.

- Site is adequate based on coverage of the building, parking and other impervious areas
 - Vehicle access, parking, circulation, and delivery on the site meet the needs of the operation.
 - Utilities servicing the site along with their capacities are adequate
 - Who does the facility serve, where do they commute from and where they will park
 - Where staff commute from and where they will park
 - Site is serviced by public transportation
 - Where shipments and receipts are made
 - Surrounding disturbances that may impact operations.
 - Environmental conditions – Is hazardous abatement/contaminated soil clean-up needed?
 - Is an Environmental Assessment or Environmental Impact Assessment needed?
 - Traffic study
 - Historical/Archeological requirements.
 - Security criteria
7. Sustainable sites criteria. (See requirements under The B3 State of Minnesota Sustainable Building Guidelines (B3-MSBG) at <http://www.b3mn.org/guidelines/index.html>)
Criteria need to consider sustainable strategies for the site of the proposed project.
These include:
- Construction Activity pollution prevention
 - Brownfield development
 - Storm water design
 - Light pollution reduction
 - Bird protection
 - Community, Habitat, Transportation, Open Space,
 - When local/site energy systems have been analyzed and selected, the site criteria may include location(s) of photovoltaic solar panels, wind generators or geothermal systems.
8. Site Amenities and Signage
The predesign is to identify anticipated site amenities and signage and to include their associated costs
9. Security. Depending upon the State Agency's needs and operations, a security/vulnerability assessment for site and building may be needed to establish the security criteria for site selection.
This should be accomplished along with associated costs to implement.
10. Site infrastructure, zoning and codes: All available information regarding the existing or proposed site is to be included in the predesign submittal including: Existing Conditions Assessment, Hazmat Investigation, Topographic Analysis, Geotechnical/soils Environmental Studies and Reports, etc.
Investigate the site utility infrastructure needs to determine if the existing utilities have the capacity or will meet the current codes to support the proposed project. Verify zoning requirements. When the predesign team has developed the proposed size and location of the project, it is recommended that the predesign team meet with code and zoning officials to obtain information and requirements.

SECTION 6 FINANCIAL INFORMATION

6.1 CAPITAL EXPENDITURES

The total project cost includes all direct and associated costs for all activities and phases, including design, construction, loose equipment, commissioning, move-in, and contingencies. A qualified cost estimating professional should be a part of the predesign team for preparation of costs. The estimate must pull together the program requirements, site conditions, and reasonable project/facility design assumptions. Although the potential cost magnitude of the project must be kept in mind throughout the predesign phase, the detailed construction cost estimate is not prepared until other portions of the study have been completed so that all of the scope elements and site conditions of the proposed project have been identified.

The Predesign Submittal for a proposed project must include a cost plan as follows:

1. Provide a project budget using the *Project Cost Form* in Appendix 6a and the *Construction Costs Form* in Appendix 6b (Appendix 6a and 6b forms are located at the end of this Section). In the *Construction Costs Form* in Appendix 6b, indicate the construction types (new/remodel/renewal) according to categories indicated in Section 6.1a below.
2. Preparation of the Project Cost Plan and Form must be accurate; it is the basis for determining the amount of funding to be appropriated by the legislature. The full range of costs for the project must be considered. Additional costs to consider include:
 - Project Delivery Method (Construction Management, Design-Build, Design-Bid Build)
 - Owner's Project Representative
 - Envelope Commissioning – Design review, mockups and inspections during construction. (required on state projects).
 - HVAC & Electrical systems commissioning – Design review and inspections. (required)
 - Specialty design consultants and systems. (Security, Acoustics, Food Service, Lab etc.)
 - Site/Land Acquisition and development (roads, curbs, parking, lighting, landscaping, site amenities, site signage, utility infrastructure capacity)
 - Site Surveys & Geotechnical Investigations
 - Minnesota Sustainable Building Design Guidelines (B3)- (Add'l service by design team)
 - Commissioning (HVAC, electrical, building envelope) Including design review.
 - Building Information Modeling (required on new or major remodeling of state buildings)
 - Sewer/Water Access Charges (SAC & WAC)
 - Building Permits and Inspections costs
 - Deconstruction/salvage as part of demolition
 - Insurance costs to be borne by the contractor
 - Phasing (or interrupted schedules) or schedules requiring overtime
 - Temporary Utilities and Facilities
 - Facility and site restrictions or conditions that effect costs. Investigate whether the site has sufficient utility infrastructure sizing to accommodate the new project.
 - Sustainability Costs (See requirements contained in this manual)
 - Cold Weather Construction
 - Facility Security Requirements (affects cost and schedule)
 - Financing Costs

- Facility Condition Assessment (renovations)
- Hazardous Material removal (asbestos, lead paint, mold, PCBs, etc).

See 6.5 -Risk Mitigation below for additional design and owner costs to be considered

3. Large projects will require owner’s project management costs. Since agencies are not staffed to oversee project development and construction, having an individual or company represent the State and perform the day-to-day activities required of a project will be needed. Costs will vary from two to five percent of the construction cost depending upon the level of service desired.
4. Relocation costs, if applicable, need to be covered in the predesign also. These costs are funded from the general fund and not bond sales. Information regarding the Chart of Accounts will be presented when the Capital Budget Instructions are prepared and forwarded to the agencies in advance of each bonding cycle.
5. Actual cost histories adjusted for program variations that support the proposed budget are to be included and the source of these costs should be provided as well. Prior to each bonding session and during the Capital Budget Process, an inflation table will be posted on the Department of Minnesota Management and Budget (MMB) web site at:
<http://mn.gov/mmb/budget/budget-instructions/capbud2014sess/index.jsp>

6.1a CAPITAL BUDGET REQUEST CONSTRUCTION TYPE OF SPACE LISTING

- | | |
|---|-------------------------------------|
| • Monumental office buildings | • Computer facilities |
| • Office buildings | • Library facilities |
| • Correctional/detention facilities | • Higher education facilities |
| • Nursing or long-term care facilities | • Auditorium |
| • Medical clinics and facilities | • Cafeteria/kitchen/food service |
| • Hospitals | • Warehouse |
| • Residential/Community healthcare facilities | • Maintenance facilities |
| • K-12 Educational facilities | • Heating/cooling plants |
| • Laboratories | • Utility infrastructure facilities |
| • Teaching/laboratories | • Parking structures |

Cost planning is based on the principle that new project budget ranges should be derived from analysis of historical data for similar projects. If the proposed project costs do not follow historical cost patterns, then the reasons should be determined and explained in the proposed project budget.

6.2 ONGOING OPERATING EXPENDITURES

1. Along with the initial capital cost of a project, the ongoing operational costs must also be considered and then compared with current levels of funding for operations, maintenance and staffing.
2. Provide a breakdown of ongoing operating costs that will be incurred as a result of the project using the *State Operating Costs Form* – Section 6 –Appendix 6c (located at the end of this Section).
 - Estimate of project impact on the requesting agency’s operating budgets (for state agencies): Include staffing levels and corresponding salaries, building repair, replacement, utilities, and maintenance. Particular attention should be paid to whether the maintenance and operational

services are expected to be performed by agency personnel or will be contracted out to private vendors.

- Summary of proposed operating revenues and expenditures (nonstate agencies and grants): A five-year estimate of operating budgets that identifies major categories of expenditures and identifies associated revenue sources. If revenue sources include fee generated revenue, a full description of these fees and the assumptions used in making the projections and their justifications should be provided. Potential revenue sources and amounts should also be discussed in this section. All revenue sources (parking decks, dormitories, student centers, cafeterias, etc.) should be listed individually and totaled to show the offset of operational expenses.
- This section should end with a narrative that illustrates a comparison of costs that are anticipated over or under present levels of funding for operations and maintenance and staffing.

3. Although an outside consultant might prepare this section with information provided by the agency, the agency/organization should review the presentation in detail.

6.3 LIFE EXPECTANCY

Provide the estimated life expectancy of the proposed project and major elements.

- Site/Utility Systems
- Building Envelope
- Structural System
- Mechanical System
- Electrical System

The predesign should also include an analysis to provides the following information:

Initial costs (design and construction).

Operating costs (energy, water/sewage, waste, recycling, and other utilities).

Maintenance, repair, and replacement costs.

Other environmental or social costs/benefits (impacts on transportation, solid waste, water, energy, infrastructure, worker productivity, outdoor air emissions, etc).

6.4 COMPARATIVE FINANCIAL ANALYSIS

Any financial studies or analysis to determine whether new space should be leased, leased to purchase, or owned by the State will need to be funded by the agency from sources other than the bonding bill. If the outcome of the study results in a state-owned facility, the predesign (funded by bond proceeds) can then be undertaken. The predesign document will then contain the analysis showing long term cost comparisons.

6.5 RISK MITIGATION

Identify and assign budget contingencies to risks associated with the project:

For State Agency projects involving new construction, additions and major renovations, are to include the following project quality control plan AND project budget:

- a. Building Envelope Commissioning (Design reviews and construction commissioning and inspections during construction).
- b. HVAC and Electrical Systems Commissioning (Design reviews and construction commissioning and inspections during construction).
- c. MN Sustainable Building Guidelines (B3)
- d. Building Information Modeling (BIM) with interface of equipment with Archibus.

Identify all potential site related risks:

- Ownership of the site (property liens, deed, etc)
- Zoning ordinances. Design standards and setback requirements, parking/sf ratios, exterior lighting, green space or natural amenities that need to be preserved or given special treatment.
- Easements, both existing and what will be required for new development
- Acquisition issues, including timing
- Stakeholders- local/community and whether community stakeholder meetings are a part of the process
- Location, description and dimensions, including soil type, climate and topography
- Potential issues with the surrounding neighborhood or facilities.
- Vibration, or other monitoring during construction
- Utility infrastructure capacity, extension or relocation issues
- Environmental regulations and site mitigation, including history of possible contamination
- Wetlands and shoreline impacts, including a wetlands delineation and the need to fill wetlands
- Shoreline jurisdiction issues
- Requirements for the State Environmental Policy Act and National Environmental Policy Act
- Environmental Worksheet and Impact statement requirement (and schedule impact).
- Other regulatory requirements, such as State licensing requirements or U.S. Army Corps of Engineers or Department of Natural Resources permits
- Site access issues, Parking and access issues improvements required local road impacts and parking demand.
- Impact on surroundings and existing development with construction lay-down areas and phasing
- Historical and/or archaeological considerations
- Site compatibility with sustainability requirements and possible costs

Identify risks associated with the design and construction of the building:

- Building codes
- Bidding climate
- Labor/trades availability
- Labor/trade bargaining agreements coming due during the construction time (strike potential).
- Availability and delivery lead time of materials or components; or shortages of.
- Impact if construction is not completed by a critical date. i.e. if operations are moving from a leased location into the new construction and the leases have an expiration date.

The predesign is to include the risks and the associated plan for mitigating each of the risks along with contingency amounts included in the project budget.

SECTION 6 – APPENDIX 6 WORKSHEET FOR DESIGN AND OWNER COSTS

Item	Scope of Work	Fee/Cost
X	Basic Services -Architectural	
	Civil	
	Landscape	
	Structural	
	MEP (Mechanical, Electrical, Plumbing)	
	Hazardous Material survey, design, air monitoring, abatement	
	Additional Services	
	1. Specialty Design Security design Food Service Technology Fire Protection Full time site observation Historical Other	
	2. Interior & Furniture, Fixtures & Equipment (FF&E) bid package(s)	
	3. Minnesota Sustainable Building Guidelines & SB2030	
	4. Building Information Modeling (BIM) *	
	5. Move/Occupancy Consultant & Moving company	
	6. Environmental Assessment Worksheet-Impact of selected site	
	7. Phase I & II Environmental Site Assessments	
	7. Presentation model of building	
	8. Presentation Sketches of building	
	9. Presentations to Legislature, Agency Management, others	
	10. Exterior utility costs	
OWNER COSTS		
	1. Owner’s Project Representative (1 – 2% of construction)	
	2. CM at Risk Preconstruction Fees (0.5% of construction)	
	3. Other State Project Management Costs (0.75% of construction)	
	4. Construction costs auditor – (for CM-Risk & Design Build)	
	5. Building Abatement Design and Removal (Renovation & Demo)	
	6. Topographic (ALTA) Survey of selected site	
	7. Geotechnical Investigation of selected site	
	8. Phase I and II Environmental Site Assessment (for contaminants)	
	9. Environmental Assessment Worksheet-Impact Statement (if required)	
	10. HVAC and Electrical Systems Commissioning (B3 Requirement)	
	11. Building Envelope Commissioning	
	12. Construction Testing and curtainwall testing services	
	13. Permit Costs	
	14. Sewer Access Cost (SAC) and Water Access Cost (WAC)	
	15. Wetlands Delineation and (Design & Mitigation)	
	16. Utility Service Upgrades (Water, sewer, gas, electric) & Const’n	
	17. Traffic Studies	
	18. Historic Structures Report (Historic Preservation Consultant fee)	

SECTION 6 – APPENDIX 6a

**PROJECT COST FORM
Fiscal Years 2018-2023
Dollars in Thousands (\$137,500 = \$138 thousand)**

TOTAL PROJECT COSTS All Years and All Funding Sources	Project Costs All Prior Years	Project Costs FY 2018-19	Project Costs FY 2020-21	Project Costs FY 2022-23	Project Costs All Years	Project Start (Month/ Year)	Project Finish (Month/ Year)
1. Property Acquisition							
Land, Land and Easements, Options							
Buildings and Land							
Other Costs							
SUBTOTAL							
2. Predesign							
SUBTOTAL							
3. Design Fees							
Schematic							
Design Development							
Contract Documents							
Construction Administration							
Other Costs							
SUBTOTAL							
4. Project Management							
State Staff Project Management							
Non-State Project Management							
Other Costs							
SUBTOTAL							
5. Construction Costs							
Site & Building Preparation							
Demolition/Decommissioning							
Construction							
Infrastructure/Roads/Utilities							
Hazardous Material Abatement							
Construction Contingency							
Other Costs							
SUBTOTAL							
6. Art							
SUBTOTAL							
7. Occupancy							
Furniture, Fixtures and Equipment							
Telecommunications (voice & data)							
Security Equipment							
Commissioning							
Other Costs (i.e. relocation)							
SUBTOTAL							
8. Inflation							
Midpoint of Construction						Midpoint Date:	
Inflation Multiplier							
Inflation Cost							
SUBTOTAL							
9. Other							
SUBTOTAL							
GRAND TOTAL							

SECTION 6 – APPENDIX 6c

CAPITAL BUDGET REQUEST

OPERATING COSTS FORM (This form can be edited as needed or other format can be used)

CHANGES IN STATE OPERATING COSTS	Current Cost	Projected Cost (Without Inflation)			
	F.Y 2010-11	F.Y. 2012-13	F.Y. 2014-15	F.Y. 2016-17	F.Y. 2018-19
Compensation (Program and Building Operation)					
Other Program Related Expenses					
Building Operating Expenses					
State-Owned Lease Expenses					
Nonstate-Owned Leased Expenses					
Other Expenses: (specify):					
Revenue Offsets					
TOTAL					
No. of FTE* Personnel					

*FTE= Full Time Equivalent

NARRATIVE: Insert a narrative that illustrates the impact of the proposed project, by comparing costs that are anticipated over or under present levels of funding for operations and maintenance and staffing.

SECTION 7 SCHEDULE

7.1 SCHEDULE INFORMATION

Proposed project schedule: Predesign should include a realistic schedule for all stages of the project. Site selection and acquisition, required government actions and proceedings at all levels, designer selection, design approvals, construction, occupancy/relocation, and commencement of operations (commissioning) should all be included (if applicable). Pay special attention to Phasing and associated costs.

Proposed funding sequence: The schedule should include a funding sequence for the project that reconciles the agency's needs with the alternate year capital budget cycle if the project will receive funds from more than one appropriation cycle. And the schedule shall include relocation time and sequencing.

The schedule should include owner related functions also such as:

- a. Identify and purchase land
- b. Develop land to provided needed utility services.
- b. Environmental Assessments or Impact Statements
- c. Owner required shut-downs
- d. Secured access by contractors (work within a secure facility will extend the construction schedule due to entry/exit inspections, tool inventories, and security functions which typically reduce actual hours worked per day).
- e. Owner review of documents
- f. Regulatory reviews (Codes, Health Dept, Environmental, Planning Commissions, etc).
- g. Material delivery lead times.

7.1 SCHEDULE INFORMATION REQUIREMENTS

A summary of milestone dates are to be provided:

Funding received
Design Completion Date
Bidding/Award of Construction
Construction Start Date
Midpoint of Construction (see Project Cost Form and Inflation table)
Construction Completion Date
Move in dates

The predesign document should also contain a bar chart (such as a Gantt chart) schedule with all milestone events related to the project.

PREDESIGN CHECKLIST

PREAMBLE

1. Minnesota Statute §16B.335 Subdivision 3 requires submittal of a Predesign Document to the Commissioner of Administration on proposed projects that have a construction cost of \$750,000 or greater (\$1,500,000 for a local government project) when State money (of any amount) is used on the project.
2. When an appropriation is made for a major construction project, Minnesota Statute §16B.335 Subdivision 1 further requires that you not prepare final plans (construction documents) until you present the program plan and cost estimates for all elements necessary to complete the project to the chair of the Senate Finance Committee and the and the Chair of the House Ways and Means Committee and they have made their recommendations and the Chair of the House Capital Investment Committee is notified.

COMPLETE THE CHECKLIST AND ATTACH AT BACK OF DOCUMENT

PREDESIGN CHECKLIST - continued

Complete this checklist, sign, and submit with the predesign document.

Complete N/A

- | | | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | 1. Review the Contents of a <i>Predesign Submittal</i> in the State's <i>Predesign Manual</i> .
weblink: http://mn.gov/admin/government/construction-projects/manuals-guidelines-forms/index.jsp |
| <input type="checkbox"/> | <input type="checkbox"/> | 2. Structure the format of your Predesign submittal to contain the Components of Predesign. Include component tabs to readily identify and access each component. The components are: <ul style="list-style-type: none">a. Predesign Summary Statementb. Basis for Need – Project Backgroundc. Agency/Organization Planningd. Project Description<ul style="list-style-type: none">1. Architectural/Engineering Program2. Precedent Studies3. Technology Plan4. Sustainability, Energy Conservation, and Carbon Emissions5. Operations and Maintenance Requirements6. Statute Requirements7. Specialty Requirements8. Project Procurement and Delivery9. Quality Control Plane. Site Analysis and Selectionf. Financial Informationg. Schedule Information |
| <input type="checkbox"/> | <input type="checkbox"/> | 3. <i>Section 1 – Predesign Summary Statement.</i> Work with the user agency to develop the executive summary. Be brief, with a two or three paragraph scope description of the project. Below the description include costs, funding sources and schedule. |
| <input type="checkbox"/> | <input type="checkbox"/> | 4. <i>Section 1 Predesign Summary Statement:</i> Complete the " <i>Building/Project Data Sheet</i> " to tabulate the pertinent data upon which the cost estimates are based. Include this sheet as a second page to the Section 1 – Predesign Summary Statement. |
| <input type="checkbox"/> | <input type="checkbox"/> | 5. <i>Section 1 Predesign Summary Statement:</i> If the project involves remodeling of an existing building, use the " <i>Building Audit Sheet</i> " to perform an audit/survey of the building's major components, systems and their conditions. Use and amend the " <i>Building/Project Data Sheet</i> " to indicate the scope of work for the proposed project. Insert behind the Summary Statement. |
| <input type="checkbox"/> | <input type="checkbox"/> | 6. <i>Section 2 Basis For Need-Project Background:</i> Gather the Section 3 planning information from the Agency/Organization and synthesize it into the format shown in the example. Detailing the Mission, Strategic Plan, Operational Plan and Basis for Need for the project. At the back of this include any additional background information on the project from your work with the agency. |
| <input type="checkbox"/> | <input type="checkbox"/> | 7. <i>Section 2 Basis For Need-Project Background:</i> Verify that the scope of the predesign complies with the language of the appropriation. (For projects that have already received a legislative appropriation). |

- 8. Section 3 Agency/Organization Planning:** This Section supports the *Basis for Need–Project Background*. Obtain the following from the user agency/organization:

 - a. Planning documents such as org charts, mission statement,
 - b. Strategic plan, and
 - c. Operational plan for the project.

This information would include any supporting data, analysis or studies which support the proposed project and demonstrates the need for the project by linking it to the agency’s mission, strategic and operational plans; which, in turn were used to prepare Section 2.
- 9. Section 3 Agency/Organization Planning:** Included a list and narrative regarding the stakeholders involved and affected by the project (i.e. other agencies, organizations, and entities). Also include issues that remain to be resolved among stakeholders along with budget and schedule impacts upon the project.
- 10. Section 3 Agency/Organization Planning:** Impacts on Operations, Budget and Facility Staff are detailed.
- 11. Section 4.A Architectural/Engineering Program:** (For State Agency projects) Obtain and coordinate space planning standards with the Department of Administration. Then, include a review sign-off from The Department of Administration’s Real Estate and Construction Services Division. Focus on job related functional needs and the State’s *Space Guidelines* when developing the square foot areas of spaces. (Space Guidelines are located at <http://mn.gov/admin/government/construction-projects/>).
- 12. Section 4.A Architectural/Engineering Program.** Work with the user/owner to develop the space program. Employ a participatory programming methodology similar to the example) to analyze operations and activities.

 - a. Your methodology should consider Post-Occupancy Evaluation (POE).
- 13. Section 4.A Architectural/Engineering Program.:** Complete the *Space Needs Inventory* sheet for each room of the project. Include these sheets in the predesign document. The Space Needs sheet should also identify special Mechanical or Electrical needs or upgrades for the space. For instance, you would state the need for special humidification for wood instrument storage in a music classroom.
- 14. Section 4.A Architectural/Engineering Program.:** Prepare and include a detailed architectural space program with a Table of Spaces and their respective areas (square footages) with a total of assignable and gross square feet.
- 15. Section 4.A Architectural/Engineering Program.:** Provide adjacency diagrams of all spaces and a diagrammatic/conceptual layout of spaces. Superimpose these diagrams onto the Site Plan to show building/site fit and site relationships.
- 16. Section 4.A Architectural/Engineering Program.:** On state agency projects, identify potential MINNCOR Industries www.minncor.com and Minnesota State Industries products <http://stateindustries.org> for the project.

PREDESIGN - continued

Complete N/A

- 17. Section 4.A Architectural/Engineering Program.** (for State Agency Projects): If applicable to the agency, work with the user agency to incorporate a *Telecommuting Plan* for this project. Include the *Telecommuting Plan* with the Predesign submittal document. Obtain review & response letter from MN.IT.
- 18. Section 4.A Architectural/Engineering Program.** Develop the Furniture, Fixtures and Equipment (FF&E) needs and include the associated costs as a line item in the project cost estimate. Consider Interior/Exterior Signage Exterior landscaping and fixtures, Telecommunication devices, Security Camera System, Lockers, Trash compactor, Window washing equipment, phasing costs, and Moving costs. (Note: moving costs are not bondable).
- 19. Section 4.B Precedent Studies:** Research the project. Visit similar building types and include *precedent* projects into the predesign document and how the precedent affects the proposed project. Include information on the facilities (name, location, size, design features) ; Then indicate any features that will be incorporated into the proposed project. Special attention should be paid to design features that result in efficiency of program operations and ability to reduce long term operating costs.
- 20. Section 4.C Technology Program** (for State Agency Projects): Identify and document the technology needs for the project. Develop a Technology Plan for the project using the State's Technology agency (MN.IT) guidelines ("*Building Infrastructure Guidelines for State Owned Buildings*") located at: <http://mn.gov/admin/government/construction-projects/>. Technology plan is to be reviewed by MN.IT.
- 21. Section 4.C Technology Plan** (for State Agency Projects): Forward the Technology Plan to MN.IT (The State's Information Technology Agency) for review; and obtain a written letter from MN.IT. Incorporate any changes requested by MN.IT.
- 22. Section 4.D Sustainability, Energy Conservation and Carbon Emissions:** In accordance with Minnesota Statute §16B.235 identify Sustainable and High Performance goals for the project using "*The State of Minnesota Sustainable Building Guidelines*" at <http://www.b3mn.org/guidelines/index.html> . Include a summary table of goals & strategies. Also include the B3-MSBG project submittal report for the Predesign Phase that is generated by use of the B3-MSBG Tracking Tool at <http://www.b3mn.org/guidelines/index.html> .
This requirement applies when the project is new building, addition, or major renovation. See the Applicability rules at the B3-MSBG website.
- 23. Section 4.D Sustainability, Energy Conservation and Carbon Emissions:** Include a table of strategies to comply with Sustainable Building (SB) 2030 requirements. For SB2030 requirements, see: <http://www.mn2030.umn.edu>
- 24. For the Section 4.D Sustainability, Energy Conservation and Carbon Emissions:** In accordance with MN Statute § 16B.32, a identify alternative energy uses and associated systems. This applies to a new building or for a renovation of 50 percent or more of an existing building or its energy systems. Anticipate future designs

which use active and passive solar energy systems, earth sheltered construction, and other alternative energy sources where feasible.

- 25. Section 4.D Sustainability, Energy Conservation and Carbon Emissions**
When the project is for a State Agency, provide a cost-benefit analysis for
 - a) including alternative energy (wind and/or solar) sources to provide 2% of the proposed building's energy consumption. An example of an analysis is located at:<http://mn.gov/admin/business/vendor-info/construction-projects/Guidelines/predesign.jsp>
 - b) a 40 Kw "Made in Minnesota" photovoltaic solar system

- 26. Section 4.D Sustainability, Energy Conservation and Carbon Emissions:**
For compliance with MN Statute 16B.326, provide a written plan in the predesign to consider providing Geothermal and Solar Energy Heating & Cooling Systems on new or replacement HVAC systems. An example of an analysis is located at the weblink above.

- 27. Section 4.D Sustainability, Energy Conservation and Carbon Emissions:**
Include a narrative in the predesign that the project specifications are to include requirements for the contractor to submit a "Waste Management and Recycling Program Plan" for both demolition and construction.

- 28. Section 4.D Sustainability, Energy Conservation and Carbon Emissions:**
Estimated yearly energy consumption and associated costs are included.

- 29. Section 4.E Operations and Maintenance Requirements:** Conduct information gathering and program meetings with operations and maintenance staff. Document and include these needs into the predesign.

- 30. Section 4.E Operations and Maintenance Requirements:** For Projects located on the Capitol Complex, obtain "Plant Management Preferred Equipment List", "Capitol Complex Guidelines", and "Signage Guidelines". (available at <http://mn.gov/admin/government/construction-projects/manuals-guidelines-forms/index.jsp>). Include these documents in the Predesign document as instructions for the future design team.

- 31. Section 4.F Statute Requirements:**
See Appendix 4c for statute requirements related to all projects receiving any amount of state funding. Enter information on how the project will comply with each statute and include in the final predesign document.

- 32. Section 4.F Statute Requirements,:** Review the table of statutes contained in this manual. Identify the statutory requirements for the project. These are to be included in the final Predesign Document.

- 33. Section 4.F Statute Requirements:** Include any design requirements or other mandated requirements.
 - a. The statute that gives authority for the operational program
 - b. Licensing requirements. (i.e. Department of Health or other authority)

- c. Design requirements (i.e.. American Correctional Association standards).
 - d. Operating Standards (required State, Federal, & Industry standards)
 - e. Federal Statutes/Laws/Requirements.
 - f. Significant Building Code or land use/ zoning requirements.

- 34. Section 4.G Specialty Requirements:** Review the need to conduct a security and/or vulnerability assessment for the project. Include the study in the predesign document along with associated costs.

- 35. Section 4.G Specialty Requirements:** Include any unique requirements that are applicable to the specific project. i.e. performance requirements, unique testing requirements, environmental reports, assessments, impact statements, facility condition audits that may have been done, hazardous materials surveys, unique construction, restrictions.

- 36. Section 4.G Specialty Requirements:** For renovations and demolitions, verify if the building or structure or amenity is on the register of historic places and/or within a historic district. Meet with the State Historic Preservation Office (SHPO) to determine requirements. Include all SHPO requirements in the predesign as well as all specialty consultants (historic preservationist, archeologist) required for the future design team.

- 37. Section 4.H Project Procurement and Delivery:** Provide a written statement and recommendation of the proposed construction delivery method to be used on the project. Include the reasons for this selection. Options include: Design-Bid-Build, Best Value, Construction Manager at Risk, Design-Build.

- 38. Section 4.I- Project Design Services and other Owner Costs:** Provide a listing of all costs that will be incurred in order to build the project.

- 39. Section 4.J- Quality Control Plan:** Provide a listing of all quality control services and costs that are needed and will be incurred in order to building the project.

- 40. Section 5 Site Analysis and Selection:** Provide a narrative on why the preferred site was selected for the project based on the locations that best meet pre-identified site criteria. For State-owned buildings/State Agency projects, coordinate this effort with the Department of Administration, Real Estate and Construction Services.

- 41. Section 5 Site Analysis and Selection:** When locating or relocating or when proposing a new building or renovation, the Predesign Document must include an analysis of the agency’s location(s) using “*Criteria for Locating State Offices and Agencies*” located at: <http://mn.gov/admin/government/construction-projects/>

- 42. Section 5 Site Analysis and Selection:** If the proposed project is a new building that will be in a campus setting (i.e. school, university, prison, extended care); review location options on the campus in regards to efficient operation and programs provided on the campus. (i.e. Agency masterplanning of a campus should occur in order to give direction as to future growth and organization - Note: Masterplanning is not a bondable activity).

- 43. Section 5 Site Analysis and Selection:** Verify if the project will be required to undergo a State Environmental Review. To determine this, go to: <http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm>. If required the predesign will need to include all applicable information and direction to the future design team to provide assistance to the owner and responsible government unit in conducting an environmental assessment (EAW) and environmental impact statement (EIS).
Note: If the project includes federal dollars, determine the need to complete an Environmental Assessment in accordance with the National Environmental Protection Act (NEPA).
Include all applicable guidelines for EAWs and EISs into the predesign submittal document if available; if not include costs for these in the project budget. Identify required timelines in the project schedule.
- 44. Section 6 Financial Information:** Compile the project costs using the Department of Minnesota Management and Budget's *Capital Budget Request* spreadsheet form (this form is included in this manual). Complete this form and include it in the submitted Predesign document.
- 45. Section 6 Financial Information:** Compile the projected operating costs using the *State Operating Costs* form (this form is included in this manual). Other formats/forms are also acceptable.
- 46. Section 6 Financial Information,** review the Project Delivery Method (single prime, multiple prime, design/build)for impact on the *Cost Plan* for the project.
- 47. Section 6 Financial Information,** include design fees for special consultants in the project costs (i.e. food service, acoustical, security, etc.).
- 48. Section 6 Financial Information,** verify existing utility infrastructures for adequate capacity needed to support the proposed building/facility or renovation. Incorporate costs for upgrades into the budget.
- 49. Section 6 Financial Information:** If applicable and/or desired, include percent for Art in the project cost. Statute 16B.35 Subdivision 1 applies [up to 1% of the appropriation can be allocated to art in public buildings – Detention facilities and non-public buildings are exempt.]
- 50. Section 6 Financial Information:** Assist the user agency in identifying and incorporating contingency phasing and funding plans into the predesign to anticipate questions during legislative hearings.
- 51. Section 6 Financial Information:** When the proposed project is for an existing correctional facility, obtain the contractor security requirements for the facility and include appropriate cost and schedule adjustments. (Working in a secure facility will add approximately 15-20% cost to the project).
- 52. Section 6 Financial Information:** On major building projects, use the predesign to develop an options based strategy for the agency to use in approaching the

governor and legislature when requesting funding. The predesign should anticipate possible questions by presenting options for varying scopes and costs. Examples are:

- 1) It may make sense to break out options (and costs) to spread the funding over several capital bonding sessions.
- 2) Phasing of the project

- 53. Section 6 Financial Information:** For renovations, a Facility Condition Assessment has been conducted on the existing building and associated upgrade costs are included in the estimate.
- 54. Section 6 Financial Information:** Conduct an industrial hygiene investigation to determine if there are any hazardous material/asbestos abatement clean-up costs, fuel tank removal and/or contaminated soils clean-up costs for the proposed project or site.
- 55. Section 6 Financial Information:** Provide the Life Expectancy of the major building components and building as a whole and included in the predesign document. Show comparison costs of varying construction systems/components and their life span. Indicate the selected system that was used to prepare the cost estimates.
- 56. Section 6 Financial Information:** (For State Agency projects) State's Design Guidelines were reviewed and associated costs accounted for.
- 57. Section 7 Schedule Information:** Include a schedule narrative and bar chart in the submittal document. Include time for hazardous material abatement, site clean-up, fuel tank removal and soils replacement costs, project schedule phasing time, relocation/move time, and any potential long-lead material deliveries.
- 58. Section 7 Schedule Information:** Include a quality control/coordination review of the construction documents by a third party. Include the cost cost of this in the design budget. Indicate a minimum of 2 months in the schedule for this review.
- 59.** For State Agency projects: Complete the Technology Checklist. Insert the MN.IT letter indicating they have reviewed and approved the Technology and Telecommuting Plans.
- 60.** This predesign document contains all the necessary requirements and costs for:
 - a.** The owner to confidently pursue funding based on the cost estimates contained.
 - b.** The owner to advertise for design services and structure their contract with a design firm as to the design scope of work and fee; and,
 - c.** The future design team for all project requirements in order to carry out the proposed design.
 - d.** All owner costs required to deliver the proposed project.
- 61.** Include the SIGNATURE sheet, with signature of the ARCHITECT (see page 1).

PREDESIGN CHECKLIST – continued
TECHNOLOGY & TELECOMMUNICATIONS

Complete N/A

- | | | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | 1. Obtain a copy of MN.IT’s “ <i>Building Infrastructure Guidelines For State-Owned Buildings</i> ” and review the requirements for costs to be included in the project. For future design use, should the project be funded, include the Technology Plan and guidelines in the predesign submittal. |
| <input type="checkbox"/> | <input type="checkbox"/> | 2. In coordination with MN.IT, determine the need for and develop a Technology & Telecommunications Plan for the project. Form and convene a Predesign meeting to determine the agency’s technology needs, goals, timelines and objectives. The Predesign Team will consist of, but will not be limited to: <ul style="list-style-type: none"><input type="checkbox"/> Agency/customer<input type="checkbox"/> Real Estate and Construction Services’ (RECS) Project Manager<input type="checkbox"/> Telecommunications Analyst (S)/Designer (if required for predesign) Note: The State’s (RECS) Project Manager will provide the MN.IT contact name. |
| <input type="checkbox"/> | <input type="checkbox"/> | 3. For remodeling projects, verify existing technology infrastructures for adequate capacity. Include upgrade costs in the Cost Estimate. |
| <input type="checkbox"/> | <input type="checkbox"/> | 4. Identify the user agency’s short and long range plans for technology needs. |
| <input type="checkbox"/> | <input type="checkbox"/> | 5. Identify if the project is or will be a single building or campus configuration. |
| <input type="checkbox"/> | <input type="checkbox"/> | 6. Identify existing distribution rooms and their capacity. |
| <input type="checkbox"/> | <input type="checkbox"/> | 7. Identify requirements for new distribution rooms. |
| <input type="checkbox"/> | <input type="checkbox"/> | 8. Identify Fiber Optic requirements, existing locations, new fiber lines. |
| <input type="checkbox"/> | <input type="checkbox"/> | 9. Identify copper-wiring requirements, existing and new. |
| <input type="checkbox"/> | <input type="checkbox"/> | 10. If information technology work is to be within an existing building, identify existing conditions; i.e. floor & ceiling heights & conditions, piping and duct conditions, water problems, feeder cable limitations, equipment room limitations. |
| <input type="checkbox"/> | <input type="checkbox"/> | 11. Identify existing telecommunications infrastructure service to the building. |
| <input type="checkbox"/> | <input type="checkbox"/> | 12. Identify types of existing cable trays and requirements for new cable trays. |
| <input type="checkbox"/> | <input type="checkbox"/> | 13. For projects in existing buildings, identify available communications “pairs” coming into the building. |
| <input type="checkbox"/> | <input type="checkbox"/> | 14. Identify MPOP (Main Point of Presence), APOP (Alternate Point of Presence), Internet Point of Presence locations and needs. |
| <input type="checkbox"/> | <input type="checkbox"/> | 15. Forward a copy of the project Technology Plan and Telecommuting Plan to MN.IT. |
| <input type="checkbox"/> | <input type="checkbox"/> | 16. Obtain a written letter from MN.IT indicating acceptance of the Technology Plan and Telecommuting Plan for the project. Incorporate MN.IT’s letter into the Predesign Document. |

PREDESIGN CHECKLIST – continued
TECHNOLOGY & TELECOMMUNICATIONS

Complete N/A

- 17.** Incorporate any changes into the Technology Plan as requested by MN.IT (resulting from review of agency’s technology plan for the project).

- 18.** Verify existing utility infrastructures for adequate capacity and cost upgrades needed to support the proposed building/facility or renovation.

PREDESIGN CHECKLIST

Check off the above items as they are completed and include this checklist with your final submittal document. Completion of this checklist is **MANDATORY**.

CONSULTANT SIGNATURE:

Signature: _____

Name of Project: _____

Printed Name: _____

Agency: _____

Title: _____

Facility: _____

Company: _____

State Project No. _____

SAMPLE PREDESIGN SUBMITTAL COVER LETTER

LETTERHEAD
of Agency or Organization

[insert date]

Commissioner **[insert name of Commissioner of Administration]**
c/o Eric Radel
Real Estate and Construction Services
309 Administration Building
50 Sherburne Ave
St. Paul, MN 55155

Dear Commissioner **[insert name]**,

RE: Predesign Submittal for **[insert “a new”]** or **[“the remodeling of”]** **[insert name]** building

In accordance with Minnesota Statutes §16B.335, Subdivision 3, enclosed you will find the Predesign submittal document for the **[insert name of project, building & location]**. This predesign outlines the **[insert name of agency/political subdivision]** ‘s capital budget request for the **[insert year]** state legislative session.

This project consists of the **[new construction of]** or **[remodeling of]** **[insert number of square feet]** of space to support **[insert operational plan/goal]**. The total project cost is estimated to be **[insert amount]**. This proposal seeks **[insert “full funding”]** or **[“matching funds”]** in the amount of **[insert amount]**.

Sincerely,

[insert Commissioner/Authority Name]
[or head of political subdivision or other approving authority]

Enclosure

cc:

SAMPLE LEGISLATIVE NOTIFICATION LETTER

LETTERHEAD

[date]

The Honorable [insert name]
Senate Finance Committee
Minnesota State Senate
[insert room number] State Capitol Building
Saint Paul, MN 55155

The Honorable [insert name]
House Ways and Means Committee
Minnesota House of Representatives
[insert room number] State Office Building
Saint Paul, MN 55155

Dear Senator [name] and Representative [name]:

The Legislature in the Laws of 2020, Chapter 393, section 24, subsection 4 appropriated \$3,070,000 for the Minnesota Correctional Facility - Shakopee:

“To predesign, design, construct, furnish and equip the Independent Living Center (ILC) into a 48-bed general population living unit.

In accordance with M.S. §16B.335, subd. 1, the program plan and cost estimates for all elements necessary to complete the project are enclosed for your review and recommendation to move forward with construction documents, bidding, and construction. The estimated construction cost is \$2,286,611.

Should you have any questions regarding this project, please contact [insert name of contact person] [insert title] at [insert phone number].

Very truly yours,

[insert name]
[insert title]

Attachment (Capital Budget Request, Program and Construction Estimate)

cc: Sen. [name], Chair, Senate Capital Investment Committee
Sen. [name], Ranking Minority Member, Senate Capital Investment Committee
Rep. [name], Chair, House Capital Investment Committee
Rep. [name], Ranking Minority Member, House Capital Investment Committee

GLOSSARY

Agency Strategic Plan: A projection of agency facility needs based on trends, policies, and standards that define the need.

Architectural/engineering program: A written statement setting forth design objectives, constraints and criteria for a project, including space requirements and relationships, flexibility and expandability, special equipment and systems, and site requirements, if applicable.

Building Operating Expenses: Costs related to the operations of the physical building such as maintenance, utilities, security, repair and alteration, and any other costs associated with the building operations. (This cost information includes but is not limited to the following Accounting codes 2A20, 2A30, 2A90, 2B0, 2D10, 2D20, 2D90, 2J00, 2K00, 2K30, 2K60, 2K70, 2K80, 2K90, 2M00, 2M50, 2S00, 2S20, 2S90.)

Changes in State Operating Costs: Serves in the capacity of a facilities note that seeks determination of the project's impact on the agency's operating budget over a six-year period. This requirement is mandated by state statutes (M.S. 16A.105, sec. 5, subd. 5). Both direct and indirect costs should be identified for the current and future biennia including, but not limited to, staffing costs, program/service costs, and increased building operation and utility expenses. These costs should reflect the agency budget associated with the request.

Commissioning: Is a basic four-part processing verifying: the review of the project program through design and construction, the interaction and training process for facility personnel, the correction of project deficiencies, and the recordation of warranties and guarantees.

Compensation (Program & Building Operations): Refers to all the direct and indirect program and building operations staffing costs associated with this request. (This cost information includes but is not limited to the following Accounting codes 1A0-1E0.)

Construction: The total cost or estimated cost to the Owner of all elements of the project designed or specified by the architect. It does not include the compensation of the architect and the architect's consultants, the cost of land, rights-of-way, financing, or other costs which remain the responsibility of the owner.

Construction Contingency: An amount of money set aside for unforeseen conditions in a construction project. The amount can vary from 2% to 3% in new construction to 5% to 10% in projects of a remodeling nature based on project size and complexity. Differences in localized costs, design contingencies, or other items should be factored into the general construction cost.

Construction Management: Management services provided to an owner of a project during the design and/or construction stage by a person or entity possessing requisite training experience. These services may include advice on the time and cost consequences of design and construction decisions, scheduling, cost control, coordination of contract negotiations and awards, timely purchasing of critical materials and long-lead items, and coordination of construction activities.

GLOSSARY - Continued

Contract Administration: The duties and responsibilities of the architect and owners representative (state) during the construction stage.

Contract Documents: The agreement between the owner and contractor, conditions of the contract (general, supplementary, and others), drawings, specifications, and addenda issued prior to execution of the contract, other documents listed in the agreement and modifications issued after execution of the contract.

Demolition/Decommissioning: Cost for razing a facility or removing from service permanently. Hazardous material abatement associated with this action shall be itemized separately under the Hazardous Material Abatement category but included in the total cost of the project budget.

Design: The stage in the development of a project during which schematic, design development, and contract documents are produced.

Design Development: The stage of the architect's services in which the architect prepares from the approved schematic design studies the design development documents, for submission to the owner for the owner's approval.

Design Fees: These design services include normal architectural, structural, mechanical and electrical engineering services that cover the schematic, design development, contract documents, bidding, and construction administration stages of a construction project. Reimbursable items, additional services and specialty consultants should be added.

F.T.E. Personnel: The number of full time equivalent employees/students associated with this request.

Furniture, Fixtures and Equipment (FF&E): Items not normally considered permanently attached to the structure but are considered a bondable cost and not part of the construction costs. Office systems furniture is an example.

Hazardous Material Abatement: Any costs associated with the encapsulation and/or abatement of hazardous materials in structures associated with the construction project.

Inflation: The rate that cost of construction increases over the duration of the project calculated to the midpoint of construction.

Infrastructure/Roads/Utilities: Costs for the construction or enhancements to infrastructure/roads/grounds/utilities beyond the site perimeter.

Life cycle costing: Life-cycle costing is a method of calculating the total cost of ownership over the life span of the asset. Initial cost and all subsequent expected costs of significance are included in the calculations as well as disposal value and any other quantifiable benefits to be derived.

Management & Budget Multiplier: Referenced in the most current *Biennial Capital Budget Instructions*. from the Minnesota Management & Budget (formerly the Department of Finance)

GLOSSARY - Continued

Nonstate-Owned Lease Expenses: All the costs related to a commercially leased facility. This would include the lease (rental) cost, tenant (leasehold) improvements, security, and any other costs associated with an agency leasing a commercial facility. (This cost information includes but is not limited to the following Accounting codes 2A00, 2A20, 2A30, 2A40, 2B0.)

Needs analysis: Includes estimates of amount and type of space needed, survey of existing space, investigating ways to utilize existing space as an alternative to new construction, investigating other alternatives to new construction, and identifying the selection criteria for the preferred alternative.

Occupancy: The purpose for which a building, or part thereof, is used or intended to be used (Uniform Building Code).

One Percent for Art: An allocation of one percent of the construction costs only (MS 16B.35). Allocations may be exempted or reduced depending on the project.

Operational program: The operational function of a facility described in terms of services provided, products delivered, activities performed, resources needed, and results expected.

Other (specify): Other cost related to the project not accounted for in the previous categories.

Other Program Related Expenses (other than compensation costs): (This cost information includes but is not limited to the following Accounting codes 2C0, 2D00, 2D30-2D90, 2E0, 2F0, 2G0, 2H0, 2J0, 2K00, 2K30, 2K60, 2K70, 2K80, 2L0, 2M0, 2N0, 2P0, 2Q0, 2R0, 2S0, 4A0, 4B0, 4C0, 5D0, 6A0, 6B0, 6C0, 6D0.)

Predesign: The stage in the development of a project during which the purpose, scope, cost, and schedule of the complete project are defined and instructions to design professionals are produced.

Predesign Fees: The fees consumed in the preparation of the predesign document that can range from 1/4% to 1 1/4% of a construction amount depending on the scale and complexity of the project.

Project Management: Is the process of planning, scheduling, and controlling the critical aspects of the Owner's program. The quality, budget, and deadlines are protected through the use of agency staff (Owner Administration) and/or outsourcing (Construction Management).

Property Acquisition: The use of funds to acquire land, easements, options, or land with buildings or other improvements.

Remodeling (Adaption)(Alterations): Expenditures required to adapt the physical plant as required to the evolving needs of the institution and to changing standards.

Renewal: Expenditures required to keep the physical plant in reliable operating condition for its present use.(SCUP)

Revenue Offsets: New or additional revenues that are a direct result of the project's construction/renovation. (This revenue information includes but is not limited to user fees and increased gate receipts.)

Schematic Design: Drawings and other documents illustrating the scale and relationship of project components.

Security Equipment: Specialty equipment usually supplied by a separate contract from those of construction or FF&E.

GLOSSARY - Continued

Site and Building Preparation: Work performed within the perimeter of the land parcel but beyond five feet from the existing structure or new construction that would include infrastructure/ roads/and utilities.

State-Owned Lease Expenses: The rents paid for leases of spaces in buildings under the custodial control of the Department of Administration. Rates for leasing space in these buildings are set by the Department of Administration, Plant Management Division and approved by the MN Management & Budget Agency. (This cost information includes but is not limited to the following Accounting codes 2A10.)

State Staff Project Management: Costs an agency charges to a construction project to cover internal personnel administrative management.

Telecommunications (voice & data): Specialty equipment supplied by a separate contract from those of construction or FF&E.