Appendix P-1
Suggested Implementation for All Performance Management Guidelines

This document is intended to offer some guidance on the issues to consider throughout the planning, design, construction and operation processes to help achieve and improve on the performance for each guideline. This document is optional and is not a checklist to insure compliance See the guidelines sections themselves to identify specific requirements and any time sensitive deadlines for those requirements.

P.1 Guideline Management

The Guideline Management Process is outlined in Appendix P-2. Features of this process include:

- Project Work to meet the Guidelines: The Work Team responsible for compliance shifts to correspond with the organization responsible for project work in a particular phase. For Example, during design phases, the design team (and their consultants) are the Work Team. During Ongoing Occupance, the Work Team resides with the facility operations group who are responsible for maintaining and operating the facility.
- Guideline reporting: Forms P-1 through P-6. are submitted for review at the end of each phase per the Compliance Review Process.
- The Appropriated Agency Reviews the forms submitted in each phase that state the level of compliance and after approval, forwards them on to CSBR for use in the MSBG Tracking Process.

Agency Planning

- Identify the Guideline Leader appropriate to the phase to fulfill the role leading the Guideline Management Process (See Appendix P-2).
- Educate planning team so that Agency agrees to importance of:
  - A performance oriented planning, design and construction process.
  - An on-going evaluation of performance, implementation of preventive maintenance, and logging of occupant complaints and resolutions.
- Include the Guideline Management Process in budget plans. This includes long range implications for active management of performance during the Ongoing Occupancy phase.
- Education and Recognition: (Recommended) Plan ahead for ways to educate the public and the design and construction industry about the techniques and performance levels the facility will achieve. See Resources for samples of award recognition programs.[1]
- Submit Forms P-1 through P-6.

Predesign-Programming

- Identify the Guideline Leader appropriate to the phase to fulfill the role leading the Guideline Management Process.
- Guideline Leader shall document guideline tasks to perform in this phase.
- Submit Forms P-1 through P-6.

Predesign-Site Selection

[1] Some recognition programs such as LEED™ take advance planning and specific steps throughout the design process, and so are best planned for early.

- Identify the Guideline Leader appropriate to the phase to fulfill the role leading the Guideline Management Process.
- Guideline Leader shall document guideline tasks to perform in this phase.
- Submit Forms P-1 through P-6.

Schematic Design

- Identify the Guideline Leader appropriate to the phase to fulfill the role leading the Guideline Management Process.
- Guideline Leader shall highlight guideline tasks to be performed in this phase, and document details of performance goals and criteria as they develop.
- Variance Review: Analyze guidelines to determine if any variances are appropriate, and apply for variances before the end of schematic design.
- Submit Forms P-1 through P-6.

Design Development

- Guideline Leader shall highlight guideline tasks to be performed in this phase, and document details of performance goals and criteria as they develop.
- Performance Check: Guideline Leader shall review design as documented to check that it supports the physical outcomes and operational performance desired.
- Submit Forms P-1 through P-6.

Construction Documents

- Guideline Leader shall highlight guideline tasks to be performed in this phase, and document details of performance goals and criteria as they develop.
- Performance Check: Guideline Leader shall review design as documented to check that it supports the physical outcomes and operational performance desired.
- Submit Forms P-1 through P-6.

Construction Administration

- Guideline Leader (with Design Team) shall identify guideline tasks to be performed by the design team in this phase.
- Performance Verification: Guideline Leader shall verify performance that is not covered under the Commissioning Section. This includes reviewing submittal information to verify its compliance with performance criteria as incorporated in the construction documents.
- Submit applicable portions of Forms P-1 through P-6.

Construction

- Identify the Guideline Leader appropriate to the phase to fulfill the role leading the Guideline Management Process.
- Construction Guideline Leader (with Construction Team) shall identify and document guideline Construction tasks (as represented in construction documents.)
- Contractor shall comply with guidelines to the extent these are incorporated in the construction documents.
- Submit applicable portions of Forms P-1 through P-6.

Correction Period

- Identify the Guideline Leader appropriate to the phase to fulfill the role leading the Guideline Management Process.
- Education and Recognition: Explore ways to educate the public and the design and construction industry about the performance levels achieved. See Resources section for samples of award recognition programs.

- Submit applicable portions of Forms P-1 through P-6.

Ongoing Occupancy

- Identify the Guideline Leader for the ongoing occupancy phase. The Guideline Leader role during operations may be filled by the Facility Operations Manager.
- Guideline Leader shall complete annual Compliance Summary and Outcome Documentation Forms (and optionally Guideline Report), demonstrating guideline compliance, and provide an executive summary of significant facility changes, actions taken to change performance level and measured or estimated results demonstrating performance level.
- The required forms and Guideline Report shall be submitted for Compliance Review and for Benchmarking.
- Guideline Leader shall give written feedback to inform the guideline development process.

Next Use

- Guideline Leader and Facility Operations Manager shall advise in facility planning process and review, and aid in transfer of planning, design, construction, and operations performance history as documented in the Project Archive.

P.2 Planning for Conservation

Agency Planning

- Select an agency person to lead this guideline.
- Determine the required floor area based on typical industry data and first understanding of facility needs and operating parameters.
- Project organizational needs into the future. Create a document that states space, technology, and systems needs for the next 5-10 years at the beginning of a new project's inception.
- Evaluate the existing building's space utilization, opportunities, and limitations. Agency planning shall consider whether or not their needs can be met without building anything new.
- Determine if all spaces are being used to their capacity during facility use times. The measurement of success of this process will be based on whether or not the perceived facility need was resolved without new construction.
- Review space-sharing options with other state agencies or within the community. As needs are assessed, look to neighboring facilities to determine if spaces could be shared.[2]

Predesign-Programming / Predesign-Site Selection

- Project organizational needs into the future. Review the Agency Planning document that projects Agency space needs for the next 5-10 years. The programming information created in the Agency Planning phase shall be considered the Planning Baseline.
- Evaluate Agency requirements through thorough use of surveys, interviews, questionnaires, and specific system analyses; compile information using tools available in a supplementary publication.
- Analyze Program Utilization
    - Every square foot of new construction has significant economic and environmental impacts, and so to achieve the most sustainable design, it is important to do a careful program analysis in order to build no more than is needed or will be well utilized.
    - Analyze space utilization by comparing recognized standards, existing facility, and proposed program spaces (SF/person-hour)

[2] The WMEP Interdistrict Downtown School in Minneapolis is a good example of how space sharing with neighbors can effectively reduce the amount of new construction required. Refer to the Resources section for a link to the project case study.

    - The design team and agency shall work together to create a program that focuses on overall space utilization. This is measured against standard space use standards.
    - Look for opportunities to reduce the number of duplicate spaces (i.e. consider a manager's office as a conference room if that person is out of the office more than 50% of the time.)
    - Develop a space program data sheet.
- Analyze potential future uses and building lifespan. Create multiple planning schemes for projected agency needs and building's next use
- Create a new program document incorporating changes to the space needs based on the analysis outlined above. Include square footage for spaces that may be located outside the facility as a separate subtotal. Enter the reductions in square footage from the predesign/programming phase in Form P-2.

Schematic Design

- Analyze spatial utilization for program area.
  Determine net program to gross area and net program to gross volume. Excerpt from source of accepted space standards showing recommended SF/program unit ranges. Create a proposed SF/program unit and if the proposed exceeds minimum recommended, then provide an explanation.
- Analyze spatial utilization based on time.
    - For a given building area the justification for the environmental and economic demands, has most meaning when it is a well-utilized space. In a sense, all the embodied cost, and operating costs of a space is wasted for every hour it is not used for its intended purpose. This measure serves to increase awareness for all involved of the amount of "program benefit" achieved for an investment in a space. It is also a way to highlight opportunities for shared spaces between functions that have different scheduling. This can highlight under-utilized spaces that could be borrowed from adjacent facilities. It can also be a way to make more use of tax dollars to construct a building, by identifying underutilized spaces that might be shared with the community to add amenity and create interaction within the community. Each space as well as the whole facility should be analyzed for proposed annual percent utilization based on current program needs. If additional space is being rationalized by future needs the projected percent utilization should also be shown for the time frame scenario being considered.
    - In columns next to each programmed space, identify its annual % utilization based on current program needs. Add columns as needed if it is seasonally based, or if there are areas with low utilization to be examined in more detail for opportunities for space sharing.
    - Tally the total % utilization for all annual hours of all the net program area (not halls, toilets, janitor's closets, etc.)
    - Tally the % utilization for just the primary operating hours as a benchmark.
    - Report the total utilization, the operation hours to total hours, and the utilization within the operating hours.
- Analyze spatial utilization based on volume.
    - Two-dimensional spatial efficiency is a result of the layout of a building and grouping of functions which can affect the overall net to gross area ratio, which affects the environmental and economic impacts of building. Three-dimensional spatial efficiency for a given square foot area, aims at building as high and with as much plenum space as is needed. This is not to say that ample plenum space is not beneficial for future adaptability and maintenance, but that if the designer aims at

minimizing wasted height, creative solutions can occur. Nor is it to say that tall spaces whether for daylight access or for design objectives are not important, but they should be compared to the impact of added cubic feet and vertical feet of envelope to put the costs and the benefits in perspective.

- Consider impact of design configuration and system selection on projected building lifecycle scenarios.
    - Evaluate design against needs for adaptability, flexibility and disassembly.
    - Confirm life expectancy for building design and design systems accordingly.
- Enter the reductions in square footage from schematic design phase in Form P-2.

Correction Period

- Communicate intent and benefits of planning for conservation strategies to owner/operator to enhance operation

Ongoing Occupancy

- Analyze ongoing program and schedule optimization
- Review maintenance and operation of facility in relation to planning for conservation goals.
- Make improvements to optimize use of existing space before adding new space.

Next Use

- Refer to documentation of prior scenario planning and actions taken to make use of opportunities designed into the facility

P.3 Integrated Design Process

Agency Planning

- Create and distribute to all stakeholders a communication plan and a team roster with all contact information included.
- Hold comprehensive Business Planning Workshop.
  The Guideline Leader for the Agency is responsible for introducing the MSBG Guidelines to the agency at the initial discussion of a new project. The early planning of the project generally includes a group discussion about the needs of the agency and requirements for a project. The MSBG Guidelines shall be incorporated into the Comprehensive Business Plan and Strategic Plan for each Agency.

Predesign-Programming / Predesign-Site Selection

- Create or update and distribute to all stakeholders a communication plan and a team roster with all contact information included.
- Hold Programming Workshop.
  The programming workshop is to be expanded to include discussion about the MSBG Guidelines. The workshop will include MSBG education for the design team and the stakeholders. The intent is to incorporate the MSBG Guidelines into the programming discussion. An example of a format for this workshop can be found under tools: "Visioning Work Meeting/Client Awareness", provided in a supplementary publication:

Schematic Design

- Create or update and distribute to all stakeholders a communication plan and a team roster with all contact information included.

- Assemble appropriate stakeholder team.
  Include representation from every discipline that will be involved in the project, Owner's decision making designate, user, occupant, operations and maintenance representatives, at least one representative from the community, and at least one agency "client" or visitor representative. Also include owner representative and commissioning agent if applicable. Choose members who can make a commitment through post-occupancy review phase.
- Hold Facility Performance Workshop.
  Schedule a Workshop within the first 2-3 weeks of the project. Include the stakeholder team. If some cannot attend a common date, include a representative on their behalf. Review programming document from Pre-Design and update as required. Review MSBG Guidelines and revise project goals as required. Provide MSBG education for the team as required during this workshop.
- Convene multi-disciplinary team regularly for integrated progress review.
- Convene stakeholder team at least once during this phase for integrated progress review

Design Development

- Create or update and distribute to all stakeholders a communication plan and a team roster with all contact information included.
- Convene multi-disciplinary team regularly for integrated progress review
- Convene stakeholder team at least once during this phase for integrated progress review

Construction Documents

- Create or update and distribute to all stakeholders a communication plan and a team roster with all contact information included.
- Convene multi-disciplinary team regularly for integrated progress review
- Convene stakeholder team at least once during this phase for integrated progress review

Construction Administration

- Create or update and distribute to all stakeholders a communication plan and a team roster with all contact information included.
- Convene multi-disciplinary team regularly for integrated progress review
- Convene stakeholder team at least once during this phase for integrated progress review
- Convene general contractor and subcontractors for pre-construction kick-off meeting to review the MSBG goals and objectives.
- Incorporate discussion about the progress toward project outcomes during every construction meeting.

P.4 Design and Construction Commissioning

Suggested Implementation

The Suggested Implementation is presented in the form of the attached Design and Construction Commissioning matrix. Roles and responsibilities for each Commissioning Team member are flexible and need to be defined as part of the project-specific Commissioning Plan. However, some team members are prohibited from performing some of the activities due to inherent conflicts of interest. These unacceptable assignments of responsibility are blacked out in the matrix.

P.5 Operations Commissioning

Suggested Implementation

The Suggested Implementation is presented in the form of the attached Operations Commissioning matrix. Roles and responsibilities for each Commissioning Team member are flexible and need to be defined as part of the project-specific Commissioning Plan. Additional members of the Operations Commissioning Team can also be named, as deemed appropriate for each project.

P.6 Lowest Life Cycle Cost

Agency Planning - Schematic Design

- Evaluate at least three alternatives at least once before the end of the schematic design phase. Enter data into Form P-4 Energy and Atmosphere Documentation.

Design Development - Construction Documents

- Evaluate at least three alternatives at least once more before the end of the Construction Documents phase. Enter data into Form P-4 Energy and Atmosphere Documentation.

Ongoing Occupancy

- It is recommended a comparison to the final project model be run at least every 5 years to capture experiences during construction and operations and compare them with assumptions made in the final project model.