WISCONSIN DEPARTMENT OF ADMINISTRATION

Division of State Facilities

Sustainable Facilities Standards

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Introduction

The Building Commission Sustainable Facilities Policy, and Division of State Facilities (DSF) Sustainable Facilities Standards (Standards) prescribe the minimum sustainable requirements for state construction and leased facilities and they apply to all DSF projects without exception, regardless of size or budget. The fundamental purpose is to improve the overall quality and usability of state owned and leased facilities and optimize monetary, material, environmental and human resources.

Project Stakeholders and Responsibilities

Stakeholders from the Agency, DSF, Architect/Engineers, and Contractors participate in the development and implementation of DSF construction projects. Project stakeholders share collective responsibility for implementing DSF Sustainable Facilities Standards.

The standards are employed in concert with Agency program and technical requirements for the project, along with other DSF Design Guidelines, Energy Issues and Policies and are neither subservient nor supersede them. Many requirements will apply to larger projects with multiple systems and components. Utility, maintenance and other smaller projects may incorporate only a few applicable standards to ensure a durable, sustainable design and construction. Stakeholder participants and their primary sustainability role and responsibility are:

Stakeholders	Primary Role
Agency Planning & Budgeting – Agency planners, budget analysts, facility users & operations and maintenance staff	**Leads the Pre-design phase –** Through Program Statement & Capitol Budget Requests identifying Agency's sustainable goals and budgets for the associated construction and design costs
DSF - Capital budget analysts, project managers (PM), technical specialists, construction representatives	**Takes charge of and supervises all engineering or architectural services or construction work** ss 16.85 Ensures project development & construction of a sustainable facility.
Architect/Engineers, consultants (frequently called the "designer" or "design team")	Designs the sustainable facility through collaboration, design strategies, and the use of components & systems to meet the identified applicable standards.
Contractor, subcontractors and suppliers	Constructs & manages the construction per the project documents incorporating sustainable construction practices & commissioning to ensure future sustainable operations

Sustainable Facilities Checklist

The **Sustainable Facilities Checklist** (Excel-spreadsheet form) (Checklist) identifies, records and tracks the applicable standards for a project from Pre-design through Post Construction. At the start of a project, it is critical that the project budget includes the cost of designing and constructing the desired sustainable Requirements. The Agency submits the first Checklist with the Program Statement, the Capitol Budget Request or Building Commission Agency Request. Successive versions of the Checklist record the evolution of the project's sustainable intent, strategies and design. Final applicability for all Requirements should be determined by the completion of the Preliminary Design phase.

Agencies may request to pursue **LEED Certification** and note that intention on the Checklist. All applicable requirements of the DSF Sustainable Facilities Standards must be met even if LEED Certification is pursued. The project budget must include all costs associated with the LEED Certification process. Conserve Wisconsin and Executive Order 145 requires state owned and leased properties to be operated in a sustainable manner so if LEED Certification is sought, **LEED EB Certification** should be pursued by the Agency for measuring and reporting energy usage and conserving resources.

Stakeholders review and revise the Checklist as the project develops, based on currently available knowledge, marking Yes or No in the "Applicable?" column. If insufficient information is available to determine whether a Requirement applies or not, the Checklist author (Agency, DSF or Architect/Engineer) should mark the "Applicable?" column with a "?" (Uncertain) and provide an explanation in the Remarks column.

Checklist authors should also use the Remarks column to explain the status of the Requirement, record special goals, or indicate why the Requirement does not apply. In the Preliminary Design Phase, the remarks can identify a conceptual or design strategy. Final Design Phase comments might describe specific construction that satisfies a Requirement. Remarks at the Post Construction Phase should record any significant achievements or difficulties.

The following Stakeholder Sustainability Responsibilities matrix details the responsibilities for developing, designing, constructing and maintaining a sustainable facility. A flow diagram of a **Traditional Project Lifecycle**, highlighted to identify actions related to the DSF Sustainable Facilities Standards, is included in the Appendix.

Throughout the DSF Sustainable Facilities Standards, the individual requirements identify Submittals that document, track and ensure incorporation and identify design mythologies used in achieving the sustainable designs as identified on the Checklist. Submittals require compliance statements, design calculations, product data, etc. as identified within each individual Requirement. Submittals are required from the various stakeholders with the A/E compiling most the submittals at completion of the Preliminary Design phase and again at the end of construction.

Stakeholder Sustainability Responsibilities				
Project Phase	**Agency Planning & Budget**	**DSF**	**Architect/Engineer**	**Agency Operations & Maintenance**
Pre-Design (Capital Budget) –Includes: Facilities Investment Plan, 6-Year Plan, Long Range Maintenance & Preservation Plan, and Master Plans	• Evaluate use of existing Agency facilities • Confer with DSF Real Estate to evaluate the statewide facility portfolio. • Facilitate internal Agency input from users, staff, O&M, etc • Request DSF support as needed • Draft the Checklist identifying applicable Requirements • Develop project budget to support applicable sustainable standards	• Budget Analyst reviews Agency Capitol Budget Request and recommends projects for inclusion in the Capitol Budget Bill. • DSF Technical specialists & PM advise Budget Analysts & Agency on project requests • Budget Analyst confirms Checklist is included and budget supports desired sustainable standards • Real estate advises on statewide facility planning	• A/E may be hired by DSF (when requested by the Agency) to participate in developing the project Program Statement.	• Provide O&M input relative to project request, Program Statement and applicable sustainable design

Stakeholder Sustainability Responsibilities				
Project Phase	**Agency Planning & Budget**	**DSF**	**Architect/Engineer**	**Agency Operations & Maintenance**
Pre-Design (Monthly Building Commission) Agency Requests & Small Project Requests	• Submit BC Agency request with Sustainable Facilities Checklist. • Small Projects incorporate sustainable requirements within the project description. • Participate in revising Checklist in preparation for A/E Invitation for Services	• PM facilitates revising or refining Checklist to determine A/E scope for services • PM reviews A/E proposal for appropriate design services	• At Project Kick-off Meeting review Checklist and determine A/E services for proposal development • Recommend appropriate revisions • Verify adequacy of project program scope, schedule, and budget.	• Provide O&M input relative to project request to help define the scope and determine required A/E services
Preliminary Design	• Participate in defining strategies & project design to develop a sustainable facility	• PM facilitates stakeholders to support an integrated, durable, & sustainable design incorporating identified Requirements • PM facilitates development & submittal of Design Report (& Peer Review-if required), including Checklist & Submittals • PM receives Submittals from A/E	• Receive & incorporate stakeholders input • Define conceptual design incorporating sustainable Requirements • Develop & collect Submittals & assemble Design Report (& Peer Review-if required), including refined Checklist and supporting information	• Provide O&M input to define strategies & project design to meet Requirements
Final Design	• Participate as requested to refine design to meet Requirements	• PM facilitates construction document efforts to meet Requirements • PM receives Design Submittals from A/E	• Coordinate integrated design team effort to ensure construction documents meet Requirements • Assemble and forward Design Phase Submittals to DSF PM	• Provide O&M input to develop project construction documents as required

Stakeholder Sustainability Responsibilities				
Project Phase	**Agency Planning & Budget**	**DSF**	**Architect/Engineer**	**Agency Operations & Maintenance**
Construction	• Participate to enable construction to meet Requirements	• DSF PM & Project Representatives facilitates information collection & submittals to ensure sustainable construction • PM receives Construction Submittals	• Monitor & collect Submittals to document construction meets Requirements • Forward Construction Submittals to DSF PM	• Provide O&M input to construct a sustainable facility.
Post-Construction	• Purchase sustainable furniture and equipment • Develop sustainable operations and maintenance plan • Review identified sustainable requirements from the beginning of the project to what was incorporated into the facility • Evaluate project outcome & contribute to lessons learned & incorporate lessons learned into future projects	• DSF facilitates information collection & submittal to enable Agency O&M to operate the facility in a sustainable manner • PM receives Construction Submittals • Review compliance & non-compliance to Requirements & incorporate lessons learned into a lessoned learn document and incorporate them into future projects	• Monitor & collect Submittals documenting post-construction meets Requirements • Assemble & forward Construction Submittals with the Record Documents to PM • Evaluate project outcome & contribute to lessons learned	• Participate in O&M training • Develop sustainable operations and maintenance plan equal to LEED EB. • Measure & verify utility usage to gauge the effectiveness of the sustainable operations equal to LEED EB • Provide Construction Submittal information to project A/E • Evaluate project outcome & contribute to lessons learned

Project	***Project Name***
Project No.	***Project No.***
Project Stage	***Planning, Design, Construction, or Occupancy***
Checklist Author	***Author*** ***Checklist Date***

Applicable?		Requirements	Primary Responsibility	Remarks Note any: Reason if Unknown or Not Applicable, Any goals beyond Min. Req'ts., Other comments
	1. Portfolio Management & Assessment of Need			
Yes		** Portfolio Management & Assessment of Need	A	
	2. Program Development			
Yes		** Program Development	A	
	3. Integrated Design			
Yes		** Integrated Design	D, DSF	
	4. Sustainable Site Requirements			
	SS W1/P1	* Construction Site Erosion & Sedimentation Control	D/C	
	SS C1	Site Selection	A	
	SS C2	Development Density & Community Connectivity	A	
	SS C3	Brownfield Redevelopment	A	
	SS C4.1	Alternative Transportation Public Transportation Access	A	
	SS C4.2	* Alternative Transportation Bicycle Storage & Changing Rooms	D	
	SS C4.3	* Alternative Transportation Low Emitting & Fuel Efficient Vehicles	D	
	SS C4.4	Alternative Transportation Parking Capacity	A	
	SS C5.1	Site Development, Protect or Restore Habitat	A/D	
	SS C5.2	Reduced Site Disturbance Development Footprint	A/D	
	SS C6.1	Permanent Stormwater Management (Discharge Rate & Vol - DNR 151)	D	
	SS C6.2	* Permanent Stormwater Management (Quality Treatment - DNR 151)	D	
	SS C7.1	Heat Island Effect: Non-Roof	D	
	SS C7.2	*LEED Credit Not Used*		
	SS C8	Light Pollution Reduction	D	
	5. Water Efficiency Requirements			
	WE C1.1	*Incorporated into WE C1.2*		
	WE C1.2	Water Efficient Landscaping No Potable Use or No Irrigation	D	
	WE C2	*LEED Credit Not Used*		
	WE C3.1	Water Use Reduction, 20% Reduction	D	
	WE C3.2	*LEED Credit Not Used*		
	6. Energy & Atmosphere Requirements			
	EA P1	* Commissioning	D, C	Indicate DSF Level 1 or Level 2
	EA P2	Minimum Energy Performance	D	
	EA P3	* CFC Reduction in HVAC&R Equipment	D	
	EA C1	* Optimize Energy Performance for Projects > $2 million	D	
	EA C2	* Renewable Energy	D	
	EA C3	*Incorporated into EA P1*		
	EA C4	*LEED Credit Not Used*		
	EA C5	* Measurement & Verification	D, O	
	EA C6	Green Power	A, O	

	DSF Requirement / LEED Credit Comparison	Primary Responsibility	
		A	Agency - Planning, Budget Analyst
	Same as LEED 2.1 or 2.2 Credit	D	Architect/Engineer
	* DSF variation of LEED 2.1 or 2.2 Credit	DSF	Division of State Facilities
	** DSF only Standard	C	Contractor
	LEED Credit Not Used, Incorporated into another Standard or not supported	O	Agency - Operation & Maintenance

Project No.	*Project Name*			*Checklist Date*
Applicable?	**Requirements**		**Primary Responsibility**	**Remarks** Note any: Reason if Unknown or Not Applicable, Any goals beyond Min. Req'ts., Other comments
	7. Materials & Resources Requirements			
	MR P1	**Storage & Collection of Recyclables**	**D**	
	MR C1.1	**Building Reuse**	**A**	
	MR C1.2	*Incorporated into MR C1.1*		
	MR C1.3	*LEED Credit Not Used*		
	MR C2.1	**Construction Waste Management**	**C**	
	MR C2.2	*Incorporated into MR C2.1*		
	MR C3.1	**Resource Reuse**	**D**	
	MR C3.2	*Incorporated into MR C3.1*		
	MR C4.1	**Recycled Content**	**D**	
	MR C4.2	*Incorporated into MR C4.1*		
	MR C5.1	**Local/Regional Materials**	**D**	
	MR C5.2	*LEED Credit Not Used*		
	MR C6	**Rapidly Renewable Materials**	**D**	
	MR C7	*** Certified Wood**	**D**	
	MR W1	**** Durable Buildings**	**D**	
	8. Indoor Environmental Quality Requirements			
Yes	**EQ P1**	**Minimum IAQ Performance**	**D**	
	EQ P2	*** Environmental Tobacco Smoke** (ETS) **Control**	**O**	
	EQ C1	*LEED Credit Not Used*		
	EQ C2	*LEED Credit Not Used*		
	EQ C3.1	**Construction IAQ Management Plan** During Construction	**C**	
	EQ C3.2	**Construction IAQ Management Plan** Before Occupancy	**C**	
	EQ C4.1	**Low-Emitting Materials** Adhesives & Sealants	**D**	
	EQ C4.2	**Low-Emitting Materials** Paints	**D**	
	EQ C4.3	**Low-Emitting Materials** Carpet	**D**	
	EQ C4.4	**Low-Emitting Materials** Composite Wood	**D**	
	EQ C5	**Indoor Chemical & Pollutant Source Control**	**D**	
	EQ C6.1	*LEED Credit Not Used*		
	EQ C6.2	*LEED Credit Not Used*		
	EQ C7.1	*LEED Credit Not Used*		
	EQ C7.2	*LEED Credit Not Used*		
	EQ C8.1	*** Daylight & Views**	**D**	
	EQ C8.2	*LEED Credit Not Used*		
	9. Operation & Maintenance Requirements			
		**** Operation & Maintenance**	**O**	
	10. Purchasing of Furniture, Fixtures and Equipment Requirements			
		**** Purchasing of Furniture, Fixtures and Equipment**	**A**	
	11. Accountability, Verification, and Reporting Requirements			
	AR 1	**** Accountability for Sustainability**	**DSF**	
	AR 2	**** Verification during Project Design**	**DSF**	
	AR 3	**** Verification during Project Construction**	**DSF**	
	AR 4	**** Verification following Construction**	**DSF**	
	AR 5	**** Reporting on Construction Results**	**DSF**	
	LEED Goals			
		Seeking LEED Certification	**A**	
Yes	**LEED EB** (Agency Operations Equal to LEED Existing Building)		**A**	

		Primary Responsibility	
	DSF Requirement / LEED Credit Comparison	**A**	**Agency - Planning, Budget Analyst**
	Same as LEED 2.1 or 2.2 Credit	**D**	**Architect/Engineer**
	*** DSF variation of LEED 2.1 or 2.2 Credit**	**DSF**	**Division of State Facilities**
	**** DSF only Standard**	**C**	**Contractor**
	LEED Credit Not Used, Incorporated into another Standard or not supported	**O**	**Agency - Operation & Maintenance**

B. Sustainable Facility Standards

1. Portfolio Management
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1. Portfolio Management & Assessment of Need

Intent
Integrate the use of sustainable elements and systems into properties across the enterprise including leased and owned space. Integrate decision-making related to space needs across the portfolio. Effective use of existing properties in the State of Wisconsin facility portfolio can in many cases reduce or eliminate the need for additional facilities or for the renovation of space. Meeting program needs through existing space rather than new construction or renovation can be the most sustainable solution. Master planning for institutions and campuses can guide sustainability of not only specific building projects but overall development, renovation, and usage within these communities.

Requirements
Property evaluation should include the use or potential for the elements and systems included in these Guidelines.
Review all existing facilities to ascertain optimal use and to insure maximum utilization of available resources. Identify usage data in the Operation and Maintenance portion to guide decisions regarding ability to meet program needs with existing assets. Institutions that develop master plans and agency six-year plans will address sustainability and should identify strategies for meeting these guidelines.

Submittals
 Reference in space requests or project requests what was done to assess ability to meet need with existing space, confirm in the Design Report or written documentation. Master plans and six-year plans include sustainability information and actions.

Potential Technologies & Strategies
Improved space demand information for state facilities and determine appropriate usage metrics to guide decision-making process.

2. Program Development
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2. Program Development

Intent
Develop a complete program statement, defining the problem and identifying all needs and requirements of the end user prior to site selection and design. Utilize an integrated approach to developing the program by including, at the earliest stages of program development, all disciplines that will be involved in the project.

Requirements
Agency shall provide a complete program, defining the problem and identifying all needs and requirements. Program shall include all aspects of the project, site development, landscaping, all engineering disciplines, interior design, exterior and interior lighting, commissioning, operations and management, and any other specialty areas that will be utilized in the project.

Submittals
 Complete Program.

Potential Technologies & Strategies
Develop the program through a "workshop" facilitated by a DSF project manager and/or outsourced architect with all engineering disciplines and specialty areas represented at the workshop**.**

3. Integrated Design
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3. Integrated Design

Intent
Utilize a totally integrated design team to develop a holistic solution to the problem articulated by the program.
Comply with 4.G.2 Integrated Design Process of DSF's Policy and Procedure Manual for A/E and Consultants. See the DSF Policy & Procedure Manual for Architects/Engineers and Consultants for policy on "Energy Conservation" (Section 4.G.) and "Integrated Design Process" (Section 4.G.2).

Requirements
The design team shall meet early and often. All disciplines shall be represented at the kick-off meeting and shall participate in the development of the schematic design for the project. The design team shall include representatives of all aspects of the project, site development, landscaping, all engineering disciplines, interior design, exterior and interior lighting, commissioning authority, operation and management staff, and any other specialty areas that will be utilized in the project.

Submittals
 Schematic Design
 Design Report.

Potential Technologies & Strategies
Develop the design through a collaborative effort integrating the knowledge and talents of all disciplines.

4. Sustainable Sites
SS W1
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4. Sustainable Site Requirements

SS W1
Construction Site Erosion & Sedimentation Control

Intent
Minimize erosion during construction to reduce negative impacts on water and air quality.

Requirements
Design a sediment and erosion control plan, specific to the site that conforms to the requirements of NR 216 or COMM 61.115, NR 151 and any local construction site erosion control ordinances. The plan shall meet the following objectives:
_ Prevent loss of soil during construction by stormwater runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse.
_ Prevent sedimentation of storm sewer or receiving streams.
_ Prevent polluting the air with dust and particulate matter.
The plan will be designed and constructed in accordance with the Wisconsin DNR Storm Water Management Technical Standards for Construction Site Erosion & Sediment Control at http://dnr.wi.gov/org/water/wm/nps/stormwater/techstds.htm#Construction

or the Wisconsin Department of Transportation Erosion Control Product Acceptability List (PAL) at http://www.dot.wisconsin.gov/business/engrserv/pal.htm .

Submittals
 Reference in Design Report or written documentation.
 Provide design calculations and information for the construction site erosion control measures shown in the plans demonstration conformance with NR 216 or COMM 61.115.

Technologies & Strategies
Adopt an erosion and sediment control plan for the project site during construction. Employ strategies such as temporary and permanent seeding, mulching, earth dikes, silt fencing, sediment traps and sediment basins in accordance with DNR and DOT standards stated above.

4. Sustainable Sites
SS C1
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SS C1
Site Selection

Intent
Avoid development of inappropriate sites and reduce the environmental impact from the location of a building on a site.

Select sites that can provide multiple uses and stimulate sustainable development.

Requirements
Avoid developing buildings, roads or parking areas on portions of sites that meet any one of the following criteria:
_ Prime farmland as defined by the United States Department of Agriculture in the United States Code of Federal Regulations, Title 7, Volume 6, Parts 400 to 699, Section 657.5 (citation 7CFR657.5).
_ Land whose elevation is lower than 5 feet above the elevation of the 100-year flood as defined by the Federal Emergency Management Agency (FEMA). NR 116
_ Land which is specifically identified as habitat for any species on Federal or State threatened or endangered lists. NR 27
_ Within 100 feet of any water including wetlands as defined by United States Code of Federal Regulations 40 CFR, Parts 230-233 and Part 22, and isolated wetlands or areas of special concern identified by state or local rule, OR greater than distances given in state or local regulations as defined by local or state rule or law, whichever is more stringent. Chapter 30, State Statutes
_ Land which prior to acquisition for the project was public parkland, unless land of equal or greater value as parkland is accepted in trade by the public landowner (Park Authority projects are exempt).

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the civil engineer or responsible party, declaring that the project site meets the requirements.

Potential Technologies & Strategies
During the site selection process, give preference to those sites that do not include sensitive site elements and restrictive land types. Select a suitable building location and design the building with the minimal footprint to minimize site disruption. Strategies include stacking the building program, tuckunder parking, and sharing facilities with neighbors.

SS C2
Development Density & Community Connectivity

Intent
Channel development to urban areas with existing infrastructure, protect greenfields and preserve habitat and natural resources.

Requirements
OPTION 1 — DEVELOPMENT DENSITY
Construct or renovate building on a previously developed site AND in a community with a minimum density of 60,000 square feet per acre net (Note: density calculation must include the area of the project being built and is based on a typical two-story downtown development).
OR
OPTION 2 — COMMUNITY CONNECTIVITY
Construct or renovate building on a previously developed site AND within 1/2 mile of a residential zone or neighborhood with an average density of 10 units per acre net AND within ½ mile of at least 10 Basic Services AND with pedestrian access between the building and the services.
Basic Services include, but are not limited to:
1) Bank; 2) Place of Worship; 3) Convenience Grocery; 4) Day Care; 5) Cleaners; 6) Fire Station; 7) Beauty; 8) Hardware; 9) Laundry; 10) Library; 11) Medical/Dental; 12) Senior Care Facility; 13) Park; 14) Pharmacy; 15) Post Office; 16) Restaurant; 17) School; 18) Supermarket; 19) Theater; 20) Community Center; 21) Fitness Center; 22) Museum.
Proximity is determined by drawing a 1/2 mile radius around the main building entrance on a site map and counting the services within that radius.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the civil engineer, architect or other responsible party, declaring that the project has achieved the required development densities. Provide density for the project and for the surrounding area.
 Provide an area plan with the project location highlighted.

Potential Technologies & Strategies
During the site selection process, give preference to urban sites with pedestrian access to a variety of services.

SS C3
Brownfield Redevelopment

Intent
Rehabilitate damaged sites where development is complicated by real or perceived environmental contamination, reducing pressure on undeveloped land.

Requirements
Develop on a site documented as contaminated (by means of an ASTM E1903-97 Phase II Environmental Site Assessment) OR on a site classified as a brownfield by a local, state or federal government agency. Effectively remediate site contamination.

Submittals
 Reference in Design Report or written documentation.
 Provide a copy of the pertinent sections of the ASTM E1903-97 Phase II Environmental Site Assessment documenting the site contamination OR provide a letter from a local, state or federal regulatory agency confirming that the site is classified as a brownfield by that agency.
 Provide a letter, signed by the civil engineer or responsible party, declaring the type of damage that existed on the site and describing the remediation performed.
 Provide a cope of the NR 726 or NR 746 Wisconsin Administrative Code Closure letter

Potential Technologies & Strategies
During the site selection process, give preference to brownfield sites. Identify property cost savings. Give preference to sites that have already achieved closure via NR 726 or NR 746 Wisconsin Administrative Code. If site has not achieved closure, develop and implement an appropriate site remediation plan and remedial action to achieve closure within a reasonable time period.

SS C4.1
Alternative Transportation: Public Transportation Access

Intent
Reduce pollution and land development impacts from automobile use.

Requirements
Where public transportation systems exist, locate project within 1/2 mile of a commuter rail, light rail station or 1/4 mile of two or more public or campus bus lines usable by building occupants. Car and vanpools are to be encouraged by providing preferential parking.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by an appropriate party, declaring that the project building(s) are located within required proximity to mass transit.
 Provide an area drawing or transit map highlighting the building location and the fixed rail stations and bus lines, and indicate the distances between them. Include a scale bar for distance measurement.

Potential Technologies & Strategies
Perform a transportation survey of future building occupants to identify transportation needs. Site the building near mass transit whenever possible.

4. Sustainable Sites
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SS C4.2
Alternative Transportation:
Bicycle Storage & Changing Rooms

Intent
Reduce pollution and land development impacts from automobile use.

Requirements
For commercial or institutional buildings, provide secure and covered bicycle storage with convenient changing/shower facilities (within 200 yards of the building) for 5% or more of regular building occupants. For residential buildings, provide covered storage facilities for securing bicycles for 15% or more of building occupants.

Submittals
 Reference in Design Report or written documentation.
 For building projects other than residential building projects: provide a letter, signed by the Architect or responsible party, declaring the distance to bicycle storage and showers from the building entrance and demonstrating that these facilities can accommodate at least 5% of building occupants.
OR
 For residential projects: provide a letter, signed by the architect or responsible party, declaring the design occupancy for the buildings, number of covered bicycle storage facilities for securing bicycles, and demonstrating that these facilities can accommodate at least 15% of building occupants.

Potential Technologies & Strategies
Design the building with transportation amenities such as bicycle racks and showering/changing facilities.

4. Sustainable Sites
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SS C4.3
Alternative Transportation: Low Emitting & Fuel Efficient Vehicles

Intent
Reduce pollution and land development impacts from automobile use.

Requirements
Provide preferred parking for low-emitting and fuel-efficient vehicles for 5% of the total vehicle parking capacity of the site.

Low-emitting and fuel-efficient vehicles are defined as vehicles that are either classified as Zero Emission Vehicles (ZEV) by the California Air Resources Board or have achieved a minimum green score of 40 on the American Council for an Energy Efficient Economy (ACEEE) annual vehicle rating guide.
"Preferred parking" refers to the parking spots that are closest to the main entrance of the project (exclusive of spaces designated for handicapped) or parking passes provided at a discounted price.

Submittals
 Reference in Design Report or written documentation.
 Provide site drawings or parking plan highlighting preferred parking for low-emitting and fuel-efficient vehicles for 5% of the total vehicle parking capacity of the site.
 Provide calculations demonstrating that these facilities accommodate 5% or more of the total vehicle parking capacity.

Potential Technologies & Strategies
Provide transportation amenities such as carpool/vanpool programs.
Consider sharing the costs and benefits of refueling stations with neighbors.

SS C4.4
Alternative Transportation: Parking Capacity

Intent
Reduce pollution and land development impacts from single occupancy vehicle use.

Requirements
Size parking capacity to meet, but not exceed, minimum local zoning requirements AND provide preferred parking for carpools or vanpools capable of serving 5% of the building occupants; OR add no new parking for rehabilitation projects AND provide preferred parking for carpools or vanpools capable of serving 5% of the building occupants.
Where possible, incorporate parking with on-site roadways to avoid creation of massive paved parking areas.
Provide motorcycle parking with concrete slab. Number of motorcycle parking spaces shall be equal to 6% of the total number of parking spaces provided for motor vehicles.

Submittals
 Reference in Design Report or written documentation.
 For new projects: provide a letter, signed by the civil engineer or responsible party, stating any relevant minimum zoning requirements and declaring that parking capacity is sized to meet, but not exceed them. State the number of preferred parking spaces for carpools.
OR
 For rehabilitation projects: provide a letter, signed by the civil engineer or responsible party, declaring that no new parking capacity has been added. State the number of preferred parking spaces for carpools.

Potential Technologies & Strategies
Minimize parking lot/garage size. Consider sharing parking facilities with adjacent buildings.

SS C5.1
Site Development: Protect or Restore Habitat

Intent
Conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.

Requirements
On greenfield sites:
Limit all site disturbance to 40 feet beyond the building perimeter; 10 feet beyond surface walkways, patios, surface parking and utilities less than 12 inches in diameter; 15 feet beyond primary roadway curbs and main utility branch trenches; and 25 feet beyond constructed areas with permeable surfaces (such as pervious paving areas, stormwater detention facilities and playing fields) that require additional staging areas in order to limit compaction in the constructed area.

On previously developed or graded sites:
Restore or protect a minimum of 50% of the site area (excluding the building footprint) with native or adapted vegetation. Native/adapted plants are plants indigenous to a locality or cultivars of native plants that are adapted to the local climate and are not considered invasive species or noxious weeds. Projects using vegetated roof surfaces may apply the vegetated roof surface to this calculation if the plants meet the definition of native/adapted.

Greenfield sites are those that are not previously developed or graded and remain in a natural state. Previously developed sites are those that previously contained buildings, roadways, parking lots, or were graded or altered by direct human activities.

Submittals
 Reference in Design Report or written documentation.

 For greenfield sites: provide a letter, signed by the civil engineer or responsible party, demonstrating and declaring that site disturbance (including earthwork and clearing of vegetation) has been limited to 40 feet beyond the building perimeter; 10 feet beyond surface walkways, patios, surface parking and utilities less than 12 inches in diameter; 15 feet beyond primary roadway curbs and main utility branch trenches; and 25 feet beyond constructed areas with permeable surfaces that require additional staging areas in order to limit compaction in the constructed area. Provide site drawings and specifications highlighting limits of construction disturbance.

 For previously developed sites: provide a letter, signed by the civil engineer or responsible party, declaring and describing restoration of degraded habitat areas. Include highlighted site drawings with area calculations demonstrating that 50% of the site area that does not fall within the building footprint has been restored or protected.

Potential Technologies & Strategies
On greenfield sites;
Perform a site survey to identify site elements and adopt a master plan for development of the project site. Carefully site the building to minimize disruption to existing ecosystems and design the building to minimize its footprint. Strategies include stacking the building program, tuck-under parking and sharing facilities with neighbors. Establish clearly marked construction boundaries to minimize disturbance of the existing site and restore previously degraded areas to their natural state.

For previously developed sites:
Utilize local and regional governmental agencies, consultants, educational facilities and native plant societies as resources for the selection of appropriate native or adapted plant materials. Prohibit plant

materials listed as invasive or noxious weed species. Native/adapted plants require minimal or no irrigation following establishment, do not require active maintenance such as mowing or chemical inputs such as fertilizers, pesticides or herbicides, and provide habitat value and promote biodiversity through avoidance of monoculture plantings.

4. Sustainable Sites
SS C5.2
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SS C5.2
Reduced Site Disturbance: Development Footprint

Intent
Conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.

Requirements
Reduce the development footprint (defined as entire building footprint, access roads and parking) to exceed the local zoning's open space requirement for the site by 25%. For areas with no local zoning requirements (e.g., some university campuses and military bases), designate open space area adjacent to the building that is equal to the development footprint.
Maximize development using vertical rather than horizontal strategies.

Submittals
 Reference in Design Report or written documentation.
 Provide a copy of the local zoning requirements highlighting the criteria for open space. Provide a letter, signed by the civil engineer or responsible party, demonstrating and declaring that the open space exceeds the local zoning open space requirement for the site by 25%.
OR
 For areas with no local zoning requirements (e.g., some university campuses and military bases), designate open space area adjacent to the building that is equal to the development footprint. Provide a letter from the property owner stating that the open space will be conserved for the life of the building.

Potential Technologies & Strategies
Perform a site survey to identify site elements and adopt a master plan for development of the project site. Select a suitable building location and design the building with a minimal footprint to minimize site disruption. Strategies include stacking the building program, tuck-under parking and sharing facilities with neighbors. Establish clearly marked construction boundaries to minimize disturbance of existing and restore previously degraded areas to their natural state.

SS C6.1
Permanent Stormwater Management: Discharge Rate and Volume, per DNR 151

Intent
Limit disruption and pollution of natural water flows by managing stormwater runoff.

Requirements
If existing imperviousness is less than or equal to 50%, implement a stormwater management plan that prevents the post-development 1.5 year, 24 hour peak discharge rate from exceeding the pre-development 1.5 year, 24 hour peak discharge rate.
OR
If existing imperviousness is greater than 50%, implement a stormwater management plan that results in a 25% decrease in the rate and quantity of stormwater runoff.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the civil engineer or responsible party, declaring that the post-development 1.5 year, 24 hour peak discharge rate does not exceed the pre-development 1.5 year 24 hour peak discharge rate. Include calculations demonstrating that existing site imperviousness is less than or equal to 50%.
OR
 Provide a letter, signed by the civil engineer or responsible party, declaring and demonstrating that the stormwater management strategies result in at least a 25% decrease in the rate and quantity of stormwater runoff. Include calculations demonstrating that existing site imperviousness exceeds 50%.

Potential Technologies & Strategies
Design the project site to maintain natural stormwater flows by promoting infiltration. Specify garden roofs and pervious paving to minimize impervious surfaces. Reuse stormwater volumes generated for non-potable uses such as landscape irrigation, toilet and urinal flushing and custodial uses.

SS C6.2
Permanent Stormwater Management: Quality Treatment, per DNR 151

Intent
Limit disruption of natural water flows by eliminating stormwater runoff, increasing on-site infiltration and eliminating contaminants.

Requirements
Construct site stormwater treatment systems designed to remove 80% of the average annual post-development total suspended solids (TSS) and 40% of the average annual post-development total phosphorous (TP) based on the average annual loadings from all storms less than or equal to the 2-year/24-hour storm. Do so by implementing Best Management Practices (BMPs) outlined in Chapter 4, Part 2 (Urban Runoff), of the United States Environmental Protection Agency's (EPA's) *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*, January 1993

(Document No. EPA-840-B-92-002) or the local government's BMP document (whichever is more stringent).

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the civil engineer or responsible party, declaring that the design complies with or exceeds EPA or local government Best Management Practices (whichever set is more stringent) for removal of total suspended solids and total phosphorous.

Potential Technologies & Strategies
Design mechanical or natural treatment systems such as constructed wetlands, rain gardens, vegetated filter strips and bioswales to treat the site's stormwater.

SS C7.1
Heat Island Effect: Non-Roof

Intent
Reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate and human and wildlife habitat.

Requirements
Provide shade (within 5 years) and/or use light-colored/high-albedo materials (reflectance of at least 0.3) and/or open grid pavement for at least 30% of the site's non-roof impervious surfaces, including parking lots, walkways, plazas, etc.; OR place a minimum of 50% of parking spaces underground or covered by structured parking; OR use an open-grid pavement system (less than 50% impervious) for a minimum of 50% of the parking lot area.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the civil engineer or responsible party, referencing the site plan to demonstrate areas of paving, landscaping (list species) and building footprint, and declaring that:
 A minimum of 30% of non-roof impervious surfaces areas are constructed with high-albedo materials and/or open grid pavement and/or will be shaded within five years
 OR a minimum of 50% of parking spaces have been placed underground or are covered by structured parking
 OR an open-grid pavement system (less than 50% impervious) has been used for a minimum of 50% of the parking lot area.

Potential Technologies & Strategies
Shade constructed surfaces on the site with landscape features and minimize the overall building footprint. Consider replacing constructed surfaces (i.e. roof, roads, sidewalks, etc.) with vegetated surfaces such as garden roofs and open grid paving or specify high-albedo materials to reduce the heat absorption.

SS C8
Light Pollution Reduction

Intent
Eliminate light trespass from the building and site, improve night sky access and reduce development impact on nocturnal environments.

Requirements
Meet or provide lower light levels and uniformity ratios than those recommended by the Illuminating Engineering Society of North America (IESNA) *Recommended Practice Manual: Lighting for Exterior Environments* (RP-33-99). Design exterior lighting such that all exterior luminaires with more than 1000 initial lamp lumens are shielded and all luminaires with more than 3500 initial lamp lumens meet the Full Cutoff IESNA Classification. The maximum candela value of all interior lighting shall fall within the building (not out through windows) and the maximum candela value of all exterior lighting shall fall within the property. Any luminaire within a distance of 2.5 times its mounting height from the property boundary shall have shielding such that no light from that luminaire crosses the property boundary.

Submittals
- Reference in Design Report or written documentation.
- Provide a letter, signed by an appropriate party, declaring that the requirements have been met.

Potential Technologies & Strategies
Adopt site lighting criteria to maintain safe light levels while avoiding off-site lighting and night sky pollution. Minimize site lighting where possible and model the site lighting using a computer model. Technologies to reduce light pollution include full cutoff luminaries, low-reflectance surfaces and lowangle spotlights.

Water Efficiency Requirements

WE C1.2
Water Efficient Landscaping:
No Potable Use or No Irrigation

Intent
Limit or eliminate the use of potable water for landscape irrigation.

Requirements
Use only captured rain or recycled site water to eliminate all potable water use for site irrigation (except for initial watering to establish plants), OR do not install permanent landscape irrigation systems. Maximize use native plantings that do not require additional irrigation in dry spells

Submittals
- Reference in Design Report or written documentation.

 Provide a letter, signed by the responsible architect and/or engineer, declaring that the project site will not use potable water for irrigation. Include a narrative describing the captured rain system, the recycled site water system, and their holding capacity. List all the plant species used. Include calculations demonstrating that irrigation requirements can be met from captured rain or recycled site water.
OR
 Provide a letter, signed by the landscape architect or responsible party, declaring that the project site does not have a permanent landscape irrigation system. Include a narrative describing how the landscape design allows for this.

Potential Technologies & Strategies
Perform a soil/climate analysis to determine appropriate landscape types and design the landscape with indigenous plants to reduce or eliminate irrigation requirements. Consider using stormwater and/or greywater for irrigation.

WE C3.1
Water Use Reduction: 20% Reduction

Intent
Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

Requirements
Employ strategies that in aggregate use at least 20% less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the MEP engineer or responsible party, declaring that the project uses at least 20% less water than the baseline fixture performance requirements of the Energy Policy Act of 1992.
 Provide the spreadsheet calculation demonstrating that water-consuming fixtures specified for the stated occupancy and use of the building reduces occupancy-based potable water consumption by at least 20% compared to baseline conditions.

Potential Technologies & Strategies
Estimate the potable and non-potable water needs for the building. Use high efficiency fixtures, dry fixtures such as composting toilets and waterless urinals, and occupant sensors to reduce the potable water demand. Consider reuse of stormwater and greywater for non-potable applications such as toilet and urinal flushing.

6. Energy and Atmosphere

EA P1
Commissioning

Intent
Implement commissioning practices into all procedures and documentation used in the planning, design, construction, closeout and operations of state facilities.
Provide for verification through the commissioning process that building systems are designed, installed, and perform according to DSF's project requirements, basis of design, and construction documents.

Requirements
Implement the fundamental best practice commissioning procedures as outlined in the DSF Policy & Procedure Manual for Architects/Engineers and Consultants

Submittals
 Reference commissioning procedures in Design Report or other written documentation.
 Provide a final commissioning report, signed by the owner or commissioning provider, confirming that the fundamental commissioning requirements have been successfully executed.
 Additional specific commissioning submittal and documentation requirements as identified in the commissioning provider's contract and in the project bid documents.

Potential Technologies & Strategies:
Engage a commissioning authority and adopt a commissioning plan. Include commissioning requirements in bid documents and task the commissioning provider to produce a final commissioning report once all outstanding commissioning activities are completed and all identified issues are resolved successfully.

EA P2
Minimum Energy Performance

Intent
Establish the minimum level of energy efficiency for the base building and systems.

Requirements
Design the building to comply with ASHRAE/IESNA Standard 90.1-2004 (without amendments) or the local energy code, whichever is more stringent. Follow the requirements of the DSF Energy Design Guidelines and Lighting Design Guidelines available at DSF's Master Specifications and Design Guidelines

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by a licensed professional engineer or architect, stating that the building complies with ASHRAE/IESNA 90.1-2004 or local energy codes and DSF Energy Design Guidelines and Lighting Design Guidelines. If local energy codes were applied, demonstrate that the local code is equivalent to, or more stringent than, ASHRAE/IESNA 90.1-2004 (without amendments).

Potential Technologies & Strategies:
Design the building envelope and systems to optimize energy performance. Use a computer simulation model to assess the energy performance and identify the most cost effective energy measures. Lifecycle cost analysis is required to determine the most cost effective measures. Quantify energy performance compared to the baseline building.

Design buildings with different occupancy zones and patterns, office wing separate from laboratory wing for example.

6. Energy and Atmosphere
EA P3
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EA P3
CFC and HCFC Reduction in HVAC&R Equipment

Application
These requirements apply where at least 3 commonly available manufacturers can provide equipment that complies with these requirements. The Engineer is expected to research products for specific project equipment and capacity needs to determine which manufacturer's equipment can comply. If only 2 or less manufacturer's equipment complies then the requirements do not apply.

Intent
Reduce ozone depletion and support early compliance with the Montreal Protocol while minimizing direct contributions to global warming.
Requirements

OPTION 1
Do not use refrigerants.
OR
OPTION 2
Select refrigerants and HVAC&R that minimize or eliminate the emission of compounds that contribute to ozone depletion and global warming. The base building HVAC&R equipment shall comply with the following formula, which sets a maximum threshold for the combined contributions to ozone depletion and global warming potential:

$$LCGWP + LCODP \times 105 \leq 100$$

Where:
LCODP = [ODPr x (Lr x Life +Mr) x Rc]/Life
LCGWP = [GWPr x (Lr x Life +Mr) x Rc]/Life
LCODP: Lifecycle Ozone Depletion Potential (lbCFC11/Ton-Year)
LCGWP: Lifecycle Direct Global Warming Potential (lbCO2/Ton-Year)
GWPr: Global Warming Potential of Refrigerant (0 to 12,000 lbCO2/lbr)
ODPr: Ozone Depletion Potential of Refrigerant (0 to 0.2 lbCFC11/lbr)
Lr: Refrigerant Leakage Rate (0.5% to 2.0%; default of 2% unless otherwise demonstrated)
Mr: End-of-life Refrigerant Loss (2% to 10%; default of 10% unless otherwise demonstrated)
Rc: Refrigerant Charge (0.5 to 5.0 lbs of refrigerant per ton of cooling capacity)
Life: Equipment Life (10 years; default based on equipment type, unless otherwise demonstrated)
For multiple types of equipment, a weighted average of all base building level HVAC&R equipment shall be applied using the following formula:

$$[\ \Sigma\ (LCGWP + LCODP \times 105) \times Qunit\ ] / Qtotal \leq 100$$

Where:
Qunit = Cooling capacity of an individual HVAC or refrigeration unit (Tons)
Qtotal = Total cooling capacity of all HVAC or refrigeration

Small HVAC units (defined as containing less than 0.5 lbs of refrigerant), and other equipment such as standard refrigerators, small water coolers, and any other cooling equipment that contains LEED for New Construction Version 2.2 October 2005 - 44
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less than 0.5 lbs of refrigerant, are not considered part of the “base building” system and are not subject to the requirements of this credit.
AND
Do not install fire suppression systems that contain ozone-depleting substances (CFCs, HCFCs or Halons).
Potential Technologies & Strategies
Design and operate the facility without mechanical cooling and refrigeration equipment. Where mechanical cooling is used, utilize base building HVAC and refrigeration systems for the refrigeration cycle that minimizes direct impact on ozone depletion and global warming. Select HVAC&R equipment with reduced refrigerant charge and increased equipment life. Maintain equipment to prevent leakage of refrigerant to the atmosphere. Utilize fire suppression systems that do not contain HCFCs or Halons.

6. Energy and Atmosphere
EA C1
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EA C1 For Projects >$2million
Optimize Energy Performance

Intent
Achieve increasing levels of energy performance above the prerequisite standard to reduce environmental impacts associated with excessive energy use.

Requirements
Reduce design energy cost compared to the energy cost budget for energy systems regulated by ASHRAE/IESNA Standard 90.1-2004 (without amendments), as demonstrated by a whole building simulation using the Energy Cost Budget Method
described in Section 11 of the Standard.

New Bldgs.	Existing Bldgs.
30%	20%

Regulated energy systems include HVAC (heating, cooling, fans and pumps), service hot water and interior lighting. Non-regulated systems include plugloads, exterior lighting, garage ventilation and elevators (vertical transportation). Two methods may be used to separate energy consumption for regulated systems. The energy consumption for each fuel may be prorated according to the fraction of energy used by regulated and non-regulated energy. Alternatively, separate meters (accounting) may be created in the energy simulation program for regulated and non-regulated energy uses.
If an analysis has been made comparing the proposed design to local energy standards and a defensible equivalency (at minimum) to ASHRAE/IESNA Standard 90.1-2004 has been established, then the comparison against the local code may be used in lieu of the ASHRAE Standard.

Submittals
 Reference in Design Report or written documentation.
 Complete a letter incorporating a quantitative summary table showing the energy saving strategies incorporated in the building design.
 Demonstrate via summary printout from energy simulation software that the design energy cost is less than the energy cost budget as defined in ASHRAE/IESNA 90.1-
2004, Section 11.

Potential Technologies & Strategies
Design the building envelope and building systems to optimize energy performance.
Use a computer simulation model to assess the energy performance and identify the most cost-effective energy efficiency measures. Lifecycle cost analysis is required to determine the most cost effective measures. Quantify energy performance as compared to a baseline building. Include active and passive energy conservations systems, including occupancy sensors and zone controls.

Design buildings with different occupancy zones and patterns, office wing separate from laboratory wing for example.

6. Energy and Atmosphere
EA C2
Table of Contents

EA C2
Renewable Energy

Intent
Encourage and recognize increasing levels of on-site renewable energy self supply in order to reduce environmental impacts associated with fossil fuel energy use.

Requirements
Supply some of the building's total energy use (as expressed as a fraction of annual energy cost) through the use of on-site renewable energy systems.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the architect, owner or responsible party, declaring how much of the building's energy is provided by on-site renewable energy. Include a narrative describing onsite renewable energy systems installed in the building and calculations demonstrating the percentage of total energy costs are supplied by the renewable energy system(s).

Potential Technologies & Strategies
Assess the project for non-polluting and renewable energy potential including solar, wind, geothermal, low-impact hydro, biomass and bio-gas strategies. When applying these strategies, take advantage of net metering with the local utility.

6. Energy and Atmosphere
EA C5
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EA C5
Measurement and Verification

Intent
Provide for the ongoing accountability and optimization of building energy and water consumption performance over time.

Requirements
Meters shall meet the requirements of sections 23 05 15, 23 09 14, or 26 27 13 of the State's Master Specifications.
Install continuous metering equipment connected to a data gathering system such as a building automation system for the following end-uses:

Total building electrical energy consumption,
Total building steam or hot water energy consumption,
Total building chilled water consumption,
Total building domestic water consumption,
Total building natural gas consumption,

Sub-metering or monitoring similar to the following is encouraged for buildings where staff resources are employed to actively manage energy consuming systems:

_ Lighting systems and controls
_ Appropriate motor loads
_ Chiller energy use
_ Cooling loads
_ Air and water economizer analysis
_ Air distribution static pressures and ventilation air volumes
_ Building-related process energy systems and equipment
_ Domestic water not returned to sanitary

Develop a Measurement and Verification plan, for all buildings, that incorporates the monitoring information from the above end-uses and is consistent with Option B, C or D of the 2001 *International Performance Measurement & Verification Protocol (IPMVP) Volume I: Concepts and Options for Determining Energy and Water Savings.*

Submittals

 Reference in Design Report or written documentation.
 Provide a letter, signed by the licensed engineer or other responsible party, indicating that metering equipment has been installed for each end-use and declaring the option to be followed under IPMVP version 2001.
 Provide a copy of the M&V plan following IPMVP, 2001version, including an executive summary.
 After one full year of occupancy provide a comparative analysis of the success of the M&V plan

Potential Technologies & Strategies

Model the energy and water systems to predict savings. Design the building with equipment to measure energy and water performance. Draft a Measurement & Verification Plan to apply during building operation that compares predicted savings to those actually achieved in the field.

6. Energy and Atmosphere
EA C6
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EA C6
Green Power

Intent

Encourage the development and use of grid-source, renewable energy technologies on a net zero pollution basis.

Requirements

Provide at least 35% of the building's electricity from renewable sources by engaging in at least a two-year renewable energy contract. Renewable sources are as defined by the Wisconsin Statute 196.374.
DETERMINE THE BASELINE ELECTRICITY USE
Use the Department of Energy (DOE) Commercial Buildings Energy Consumption Survey (CBECS) database to determine the estimated electricity use.

Submittals

 Reference in Design Report or written documentation.

 Provide a letter, signed by the owner or other responsible party, documenting that the supplied renewable power is equal to 35% of the project's energy consumption and the sources meet the WisStat 196.374 definition of renewable energy.
 Provide a copy of the two-year electric utility purchase contract for power generated from renewable sources.

Potential Technologies & Strategies
Determine the energy needs of the building and investigate opportunities to engage in a green power contract. Green power is derived from solar, wind, water, geothermal, biomass, tidal or wave action or fuel cell technology using a renewable fuel. Renewable energy certificates (RECs), tradable renewable certificates (TRCs), green tags and other forms of green power that comply with Center for Resource Colutions (CRS) Green-e's technical requirements can be used to document compliance with requirements.

7. Materials & Resource Requirements

MR P1
Storage & Collection of Recyclables

Intent
Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills.

Requirements
Provide an easily accessible area that serves the entire building and is dedicated to the separation, collection and storage of materials for recycling including (at a minimum) paper, corrugated cardboard, glass, compostable food wastes, plastics and metals.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the architect or owner, declaring that the area dedicated to recycling is easily accessible and accommodates the building's recycling needs.
 Provide a plan showing the area(s) dedicated to recycled material collection and storage.

Potential Technologies & Strategies
Designate an area for recyclable collection and storage that is appropriately sized and located in a convenient area. Identify local waste handlers and buyers for glass, plastic, office paper, newspaper, cardboard and organic wastes. Instruct occupants on building recycling procedures. Consider employing cardboard balers, aluminum can crushers, recycling chutes, composting containers and other waste management technologies to further enhance the recycling program. Consider employing clearly identified recycling stations available to employees throughout the facility.

MR C1.1
Building Reuse: Maintain Shell/Structure and Non-Shell/Non-Structure

Intent
Extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

Requirements
Maintain existing building structure and shell (exterior skin and framing, excluding window assemblies and non-structural roofing material) AND non-shell areas (interior walls, doors, floor coverings and ceiling systems).

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the architect, owner or other responsible party, documenting % of Shell/Structure and % of Non-Shell/Non-Structure maintained. List the retained elements.

Potential Technologies & Strategies
Consider reuse of existing buildings, including structure, shell and non-shell elements. Remove elements that pose contamination risk to building occupants and upgrade outdated components such as windows, mechanical systems and plumbing fixtures. Quantify the extent of building reuse.

MR C2.1
Construction Waste Management: Divert From Landfill

Intent
Divert construction, demolition and land clearing debris from landfill disposal.
Redirect recyclable recovered resources back to the manufacturing process. Redirect reusable materials to appropriate sites.

Requirements
Develop and implement a waste management plan, quantifying material diversion goals. Recycle and/or salvage construction, demolition and land clearing waste. Calculations can be done by weight or volume, but must be consistent throughout.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the architect, owner or other responsible party, tabulating the total waste material, quantities diverted and the means by which diverted, and declaring that the requirements have been met.

Potential Technologies & Strategies
Establish goals for landfill diversion and adopt a construction waste management plan to achieve these goals. Consider recycling land clearing debris, cardboard, metal, brick, concrete, plastic, clean wood, glass, gypsum wallboard, carpet and insulation. Designate a specific area on the construction site for recycling and track recycling efforts throughout the construction process.
Identify construction haulers and recyclers to handle the designated materials. Note that salvage may include donation of materials to charitable organizations such as Habitat for Humanity.

7. Materials and Resources
MR C3.1
Table of Contents

MR C3.1
Resource Reuse: 10%

Intent
Reuse building materials and products in order to reduce demand for virgin materials and to reduce waste, thereby reducing impacts associated with the extraction and processing of virgin resources.

Requirements
Use salvaged, refurbished or reused materials, products and furnishings for at least 10% of building materials.

Submittals
□ Reference in Design Report or written documentation.
□ Provide a letter, signed by the architect, owner or other responsible party, declaring that the requirements have been met and listing each material or product used. Include details demonstrating that the project incorporates the required percentage of reused materials and products and showing their costs and the total cost of all materials for the project.

Potential Technologies & Strategies
Identify opportunities to incorporate salvaged materials into building design and research potential material suppliers. Consider salvaged materials such as beams and posts, flooring, paneling, doors and frames, cabinetry and furniture, brick and decorative items.

7. Materials and Resources
MR C4.1
Table of Contents

MR C4.1
Recycled Content: 10-20% (post-consumer + 1/2 post-industrial)

Intent
Increase demand for building products that incorporate recycled content materials, therefore reducing the impacts resulting from extraction and processing of new virgin materials.

Requirements
Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 10-20% of the total value of the materials in the project. The value of the recycled content portion of a material or furnishing shall be determined by dividing the weight of recycled content in the item by the total weight of all material in the item, then multiplying the resulting percentage by the total value of the item.

Mechanical and electrical components shall not be included in this calculation. Recycled content materials shall be defined in accordance with the Federal Trade Commission document, *Guides for the Use of Environmental Marketing Claims, 16 CFR 260.7 (e)*, available at www.ftc.gov/bcp/grnrule/guides980427.htm.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the architect, owner or other responsible party, declaring that the requirements have been met and listing the recycled content products used. Include details demonstrating that the project incorporates the required percentage of recycled content materials and products and showing their cost and percentage(s) of post-consumer and/or post-industrial content, and the total cost of all materials for the project.

Potential Technologies & Strategies
Establish a project goal for recycled content materials and identify material suppliers that can achieve this goal. During construction, ensure that the specified recycled content materials are installed and quantify the total percentage of recycled content materials installed.

MR C5.1
Regional Materials: 20% manufactured regionally

Intent
Increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the regional economy and reducing the environmental impacts resulting from transportation.

Requirements
Use a minimum of 20% of building materials and products that are manufactured* regionally within a radius of 500 miles.
* Manufacturing refers to the final assembly of components into the building product that is furnished and installed by the tradesmen. For example, if the hardware comes from Dallas, Texas, the lumber from Vancouver, British Columbia, and the joist is assembled in Kent, Washington; then the location of the final assembly is Kent, Washington.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the architect or responsible party, declaring that the requirements have been met. Include calculations demonstrating that the project incorporates the required percentage of regional materials/products and showing their cost, percentage of regional components, distance from project to manufacturer, and the total cost of all materials for the project.

Potential Technologies & Strategies
Establish a project goal for locally sourced materials and identify materials and material suppliers that can achieve this goal. During construction, ensure that the specified local materials are installed and quantify the total percentage of local materials installed.

MR C6
Renewable Materials

Intent
Reduce the use and depletion of finite raw materials and long-cycle renewable materials by replacing them with renewable materials.

Requirements
Use renewable building materials and products (made from plants that are typically harvested within a ten-year cycle or shorter) for 5% of the total value of all building materials and products used in the project.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the architect or responsible party, declaring that the requirements have been met. Include calculations demonstrating that the project incorporates the required percentage of renewable products. Show their cost and percentage of renewable components, and the total cost of all materials for the project.

Potential Technologies & Strategies
Establish a project goal for renewable materials and identify materials and suppliers that can achieve this goal. Consider materials such as, wool carpets, straw board, linoleum flooring, poplar OSB, sunflower seed board, wheatgrass cabinetry and others. During construction, ensure that the specified renewable materials are installed.

MR C7
Certified Wood

Intent
Encourage environmentally responsible forest management and use of local forest products

Requirements
70% of wood-based materials and products, must be obtained from forests certified in accordance with Wisconsin State, County or Managed Forest Law certification program and certain national certification programs listed below, for wood building components including, but not limited to, structural framing and general dimensional framing, flooring, finishes, furnishings, and non-rented temporary construction applications such as bracing, concrete form work and pedestrian barriers.

- WI MFL Tree Farm Group Record #007 Certificate #NSF-ISR 1Y544-T1
- WI County Forest Certificate #NSF-SFIS-1Y943-S1
- WI County Forest Certificate #SCS-FM/COC-083G-
- WI State Forest Certificate #SCS-FM/COC-0007N
- WI State Forest Certificate #NSF-SFIS-1Y941-S1
- American Tree Farm System (ATFS)
- Forest Stewardship Council (FSC)
- Sustainable Forest Initiative (SFI)

Submittals
 Reference in Design Report or written documentation.

 Provide a letter, signed by the architect, owner or responsible party, declaring that 70% of wood based materials and products were obtained from Wisconsin Certified Forests and listing the materials and products used.

 Provide the location and ownership of the certified woodlot for each material/product used to meet the requirement.

Potential Technologies & Strategies
Establish a project goal for Wisconsin Certified Forest wood products and national certifications and identify suppliers that can achieve this goal. During construction, ensure that Wisconsin Certified Forest wood products are installed Encourage Wisconsin Certified Foresters to work with the Sawmill Industry to pursue Green Tier and the development of an industry specific Environmental Management System.

MR W1
Durable Building

Intent
Minimize materials use and construction waste over a building's life resulting from premature failure of the building and its constituent components and assemblies.

Requirements
Develop and implement a Building Durability Plan, in accordance with the principles in *CSA S478-95 (R2001) Guideline on Durability in Buildings,* for the components within the scope of the Guideline, for the construction and preoccupancy phases of the building as follows:

- Design and construct the building to ensure that the predicted service life exceeds the design service life established in *Table 2* in *CSA S478-95 (R2001) Guideline on Durability in Buildings.*
- Where component and assembly design service lives are shorter than the design service life of the building, design and construct those components and assemblies so that they can be readily replaced, and use a design service life in accordance with *Table 3 in* CSA *S478-95 (R2001) Guideline on Durability in Buildings,* as follows:
  - For components and assemblies whose Categories of Failure are 6, 7 or 8 in *Table* 3, use a design ser ice life equal to the design service life of the building.
  - For components and assemblies whose Categories of Failure are 4 or *5* in *Table 3,* use a design service life equal to at least half of the design service life of the building.
- Demonstrate the predicted service life of chosen components or assemblies by documenting demonstrated effectiveness, modeling of the deterioration process or by testing in accordance with *Clause* 73, 7.4 *or 7.5* and by completing *Tables AI, A2* & *A3from CS4 S478-95 (R2001) — Guideline on Durability in Buildings.*
- Document the elements of quality assurance activities to be carried out to ensure the predicted service life is achieved, in the format contained in *Table I, Quality Assurance and the Building Process, of* CSA *S478-95 (R2001) - Guideline on Durability in Buildings*
- Develop and document the quality management program for the project that ensures the quality assurance activities are carried out, in accordance with the elements identified in Clause 53, Elements of Quality Management, *CSA S478-95 (R2001) — Guideline on Durability in Buildings.*

Submittals
 Provide a letter, signed by the architect, owner or responsible party, and the general contractor declaring that a Building Durability Plan has been developed and implemented.

 Document the building science qualification certification or training qualifications of the professional(s) responsible for the building envelope design of the building.

Potential Technologies & Strategies
Design strategies specifically included to minimize premature deterioration of the walls and roof and which are appropriate to the region**.** e.g., shading screens, eaves, overhangs, scuppers, etc., surface materials appropriate to exterior conditions, use of drained walls and continuous air-barrier systems of appropriate strength.

8. Indoor Environmental Quality
EQ P1
Table of Contents

8. Indoor Environmental Quality Requirements

EQ P1
Minimum IAQ Performance

Intent
Establish minimum indoor air quality (IAQ) performance to prevent the development of indoor air quality problems in buildings, thus contributing to the comfort and well-being of the occupants.

Requirements
Meet the minimum requirements of Sections 4 through 7 of ASHRAE 62.1-2004, Ventilation for Acceptable Indoor Air Quality, and approved Addenda using the Ventilation Rate Procedure.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the mechanical engineer or responsible party, declaring that the project is fully compliant with ASHRAE 62.1-2004 and all published Addenda and describing the procedure employed in the IAQ analysis (Ventilation Rate Procedure).

Potential Technologies & Strategies
Design the HVAC system to meet the ventilation requirements of the referenced standard. Identify potential IAQ problems on the site and locate air intakes away from contaminant sources.

8. Indoor Environmental Quality
EQ P2
Table of Contents

EQ P2
Environmental Tobacco Smoke (ETS) Control

Intent
Prevent exposure of building occupants and systems to Environmental Tobacco Smoke (ETS).

Requirements
Zero exposure of building occupants and systems to ETS by prohibiting smoking in the building and locating any exterior designated smoking areas away from entries and operable windows.

Strategy
Smoking is prohibited in state owned facilities.

EQ C3.1
Construction IAQ Management Plan: During Construction

Intent
Prevent indoor air quality problems resulting from the construction/renovation process in order to help sustain the comfort and well-being of construction workers and building occupants.

Requirements
Develop and implement an Indoor Air Quality (IAQ) Management Plan for the construction and pre-occupancy phases of the building as follows:
_ During construction meet or exceed the recommended Design Approaches of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guideline for Occupied Buildings under Construction, 1995, Chapter 3.
_ Protect stored on-site or installed absorptive materials from moisture damage.
_ If air handlers must be used during construction, filtration media with a Minimum Efficiency Reporting Value (MERV) of 8 must be used at each return air grill, as determined by ASHRAE 52.2-1999.
_ Replace all filtration media immediately prior to occupancy. Filtration media shall have a Minimum Efficiency Reporting Value (MERV) of 13, as determined by ASHRAE 52.2-1999 for media installed at the end of construction.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the general contractor or responsible party, declaring that a Constuction IAQ Management Plan has been developed and implemented, and listing each air filter used during construction and at the end of construction. Include the MERV
value, manufacturer name and model number.
AND EITHER
 Provide 18 photographs—six photographs taken on three different occasions during construction—along with identification of the SMACNA approach featured by each photograph, in order to show consistent adherence to the requirements
OR
 Declare the five Design Approaches of SMACNA IAQ Guideline for Occupied Buildings under Construction, 1995, Chapter 3, which were used during building construction. Include a brief description of some of the important design approaches employed.

Potential Technologies & Strategies
Adopt an IAQ management plan to protect the HVAC system during construction, control pollutant sources and interrupt contamination pathways.
Sequence the installation of materials to avoid contamination of absorptive materials such as insulation, carpeting, ceiling tile and gypsum wallboard.

Required EQ C3.2
Construction IAQ Management Plan: Before Occupancy

Intent
Prevent indoor air quality problems resulting from the construction/renovation process in order to help sustain the comfort and well-being of construction workers and building occupants.

Requirements
Develop and implement an Indoor Air Quality (IAQ) Management Plan for the pre-occupancy phase as follows:
_ After construction ends and prior to occupancy conduct a minimum two-week building flush-out with new Minimum Efficiency Reporting Value (MERV) 13 filtration media at 100% outside air or during the winter the greatest percentage of outside air the system is capable of heating while preventing freezing building conditions. After the flushout, replace the filtration media with new MERV 13 filtration media, except the filters solely processing outside air.
OR
_ Conduct a baseline indoor air quality testing procedure consistent with the United States Environmental Protection Agency's current *Protocol for Environmental Requirements, Baseline IAQ and Materials, for the Research Triangle Park Campus, Section 01445*.
_ Prior to occupancy, vacuum and clean all surfaces of systems and equipment after construction/renovations process and flushout

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the architect, general contractor or responsible party, describing the building flush-out procedures and dates.
OR
 Provide a letter, signed by the architect or responsible party, declaring that the referenced standard's IAQ testing protocol has been followed. Include a copy of the testing results.

Potential Technologies & Strategies
Prior to occupancy, perform a two week building flush-out or test the contaminant levels in the building.

Required EQ C4.1
Low-Emitting Materials: Adhesives & Sealants

Intent
Reduce the quantity of indoor air contaminants that are odorous, potentially irritating and/or harmful to the comfort and well-being of installers and occupants.

Requirements
The VOC content of adhesives and sealants used must be less than the current VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule #1168, AND all sealants used as fillers must meet or exceed the requirements of the Bay Area Air Quality Management District Regulation 8, Rule 51.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the architect or responsible party, listing the adhesives and sealants used in the building and declaring that they meet the noted requirements.

Potential Technologies & Strategies
Specify Low-VOC materials in construction documents. Ensure that VOC limits are clearly stated in each section where adhesives and sealants are addressed.

8. Indoor Environmental Quality
EQ C4.2
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Required EQ C4.2
Low-Emitting Materials: Paints and Coatings

Intent
Reduce the quantity of indoor air contaminants that are odorous, potentially irritating and/or harmful to the comfort and well-being of installers and occupants.

Requirements
VOC emissions from paints and coatings must not exceed the VOC and chemical component limits of Green Seal's Standard GS-11 requirements.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the architect or responsible party, listing all the interior paints and coatings used in the building that are addressed by Green Seal Standard GS-11 and stating that they comply with the current VOC and chemical component limits of the standard.

Potential Technologies & Strategies
Specify Low-VOC paints and coatings in construction documents. Ensure that VOC limits are clearly stated in each section where paints are addressed.

8. Indoor Environmental Quality
EQ C4.3
Table of Contents

Required EQ C4.3
Low-Emitting Materials: Carpet

Intent
Reduce the quantity of indoor air contaminants that are odorous, potentially irritating and/or harmful to the comfort and well-being of installers and occupants.

Requirements
Carpet systems must meet or exceed the requirements of the Carpet and Rug Institute's Green Label Indoor Air Quality Test Program.

Submittals
 Reference in Design Report or written documentation.

 Provide a letter, signed by the architect or responsible party, listing all the carpet systems used in the building and stating that they comply with the current VOC limits of the Carpet and Rug Institute's Green Label Indoor Air Quality Test Program.

Potential Technologies & Strategies
Specify Low-VOC carpet products and systems in construction documents.
Ensure that VOC limits are clearly stated where carpet systems are addressed.

8. Indoor Environmental Quality
EQ C4.4
Table of Contents

EQ C4.4
Low-Emitting Materials: Composite Wood

Intent
Reduce the quantity of indoor air contaminants that are odorous, potentially irritating and/or harmful to the comfort and well-being of installers and occupants.

Requirements
Composite wood and agrifiber products must contain no added urea-formaldehyde resins.

Submittals
 Reference in Design Report or written documentation.
 Provide a letter, signed by the architect or responsible party, listing all the composite wood products used in the building and stating that they contain no added urea-formaldehyde resins.

Potential Technologies & Strategies
Specify wood and agrifiber products that contain no added urea-formaldehyde resins.

8. Indoor Environmental Quality
EQ C5
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EQ C5
Indoor Chemical & Pollutant Source Control

Intent
Avoid exposure of building occupants to potentially hazardous chemicals that adversely impact air quality.

Requirements
Design to minimize pollutant cross-contamination of regularly occupied areas:
_ Employ permanent entryway systems (grills, grates, etc.) to capture dirt, particulates, etc. from entering the building at all high volume entryways.
_ Where chemical use occurs (including housekeeping areas and copying/printing rooms), provide segregated areas with deck to deck partitions with separate outside exhaust at a rate of at least 0.50 cubic feet per minute per square foot, no air re-circulation and maintaining a negative pressure of at least 7 PA (0.03 inches of water gauge).
_ Provide drains plumbed for appropriate disposal of liquid waste in spaces where water and chemical concentrate mixing occurs.

Submittals
 Reference in Design Report or written documentation.

 Provide a letter, signed by the architect or responsible party, declaring that:
_ Permanent entryway systems (grilles, grates, etc.) to capture dirt, particulates, etc. are provided at all high volume entryways.
_ Chemical use areas and copy rooms have been physically separated with deck-to-deck partitions; independent exhaust ventilation has been installed at 0.50 cfm/square foot and that a negative pressure differential of 7 PA has been achieved.
_ In spaces where water and chemical concentrate mixing occurs, drains are plumbed for environmentally appropriate disposal of liquid waste.

Potential Technologies & Strategies
Design separate exhaust and plumbing systems for rooms with contaminants to achieve physical isolation from the rest of the building. Install permanent architectural entryway systems such as grills or grates to prevent occupantborne contaminants from entering the building.

8. Indoor Environmental Quality
EQ C8.1
Table of Contents

EQ C8.1
Daylight and Views

Intent
Provide for the building occupants a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.

Requirements
Comply with DSF's "***Daylighting Standards for State Facilities***".
Find a link to those Standards at
http://www.doa.state.wi.us/pagesubtext_detail.asp?linksubcatid=252&linkcatid=125&linkid=

Submittals
 Reference in Design Report or written documentation.
 Provide a letter signed by the architect or responsible party. Provide area calculations that define the daylight zone and provide prediction calculations or daylight simulation.

Potential Technologies & Strategies
Design the building to optimize interior daylighting. Strategies to consider include building orientation, shallow floor plates, increased building perimeter, permanent shading features, high performance glazing and photo-integrated light sensors. Predict daylighting via calculations and model daylighting strategies with a physical or computer model to assess footcandle levels and daylight factors achieved.

9. Operation and Maintenance Requirement

Intent
Sustainable design and construction is successful only if the building systems and sitescape are properly maintained and operated in accordance with the designed performance. Both operation and maintenance depend on ready access to equipment and systems requiring maintenance and having reliable, easy-to-use records of the building systems at the time of occupancy and keeping those records updated and accessible. Staff training also needs to be addressed, particularly for stormwater treatment features, low water, no-mow landscapes and building mechanical/electrical/plumbing/fire suppression systems.

Requirements
Building management, operations staff and tenants shall reference the DSF Energy Use Policy for guidance in building operations, temperature setpoints and maintenance activities recommended for reducing building energy consumption.
Prepare operation procedures and maintenance checklists for the major energy consuming building systems.

Submittals
O&M manuals.

Potential Technologies & Strategies
Develop site-specific record-keeping system
Train new staff hires on building and site features (as needed)
Offer existing staff refresher training including proper recordkeeping (once a year)

10. Purchasing of Furniture, Fixtures and Equipment Requirement

Intent
To enable building tenants to perform their jobs well and maintain good health, it's important to source furniture, fixtures and equipment that will not offgas or otherwise cause deteriorating health for the chemically sensitive.

Requirements
Purchase Energy Star approved equipment and products with ECO-labels or ECO-label certifications.

Preference for recycled content, used equipment, locally manufactured
No PVC content

Submittals
MSDS sheets for products being considered as part of bid process
Eco-label certifications

Potential Technologies & Strategies
Conduct research on greener furniture, fixtures and equipment, then select among the top 3 vendors in each category.

Printers:
- default to duplex printing at all printers
- reminders, pamphlet about benefits; make it easy

- purchase only printers capable of duplex printing
- replace all old printers
- demonstrate how to use printers

Network copy machines.

Quit requiring office furniture to “match” (we waste perfectly good furniture)

Purchase only energy efficient fixtures and equipment. Promote use of motion sensors for room lighting.

Purchasing/Leasing
- Promote recycled paper/green office supplies purchasing and evaluate the impact
- Purchase only Energy Star, duplex printers
- Promote recyclable, compostable or reusable dishware & utensils
- Purchase only flat LCD monitors
- Purchase only Energy Star PCs
- Purchase only 4 stroke engines

11. Accountability, Verification and Reporting on Results
AR 1
Table of Contents

11. Accountability, Verification and Reporting Requirements

AR 1
Accountability for Sustainability

Intent
The Division of State Facilities is accountable for implementing the sustainability policies of the State of Wisconsin Building Commission and for reporting on the results of these policies. Capital project and capital project portfolio performance information will be provided at least two times each year to the Commission.

Requirements
Reports at least twice per year on capital projects and the results of the sustainability policies of the Building Commission.

Submittals
Reporting templates
Occupant comfort surveys

Potential Technologies & Strategies
Develop comparative performance matrix across overall portfolio
Employee energy savings suggestion program with incentives

AR 2
Verification during Project Design

Intent
Meeting the sustainability guidelines of the Building Commission requires verification at several steps in the process of preparing and implementing capital projects. The division will include reporting information in design reports regarding the sustainability of capital projects using the reporting templates approved by the Commission. For projects that do not require design reports, verification will take place through the approved reporting templates approved by the Commission for such projects. The division will also report on overall portfolio performance.

Requirements
The department will publish information on the sustainability of capital projects in the manner approved by the Commission.
Provide owner/occupant with anticipated monthly/annual costs for operation/maintenance of new/enhanced energy savings technologies.
The A/E will include reporting information in design reports regarding the sustainability of capital projects using the reporting templates approved by the Commission. For projects that do not require design reports, verification will take place through the approved reporting templates approved by the Commission for such projects. The division will also report on overall portfolio performance

Submittals

Potential Technologies & Strategies
Assist in locating training and certification for contractors and subcontractors on sustainable building policy, LEED™ and Green Globes™. Work with Wisconsin Green Building Alliance and UW Extension.

Require qualified bidders,
Test to assure bidders understand what they are bidding on.

AR 3
Verification during Project Construction

Intent
Meeting the sustainability guidelines of the Building Commission requires verification at several steps in the process of preparing and implementing capital projects. The division will measure and include reporting information regarding the sustainability of capital projects achieved during construction using the reporting templates approved by the Commission. The division will also report on overall portfolio performance.

Requirements

Submittals

Potential Technologies & Strategies
Complete understanding of integrated building construction. Assurances that subcontractors follow sustainable design specifications throughout the process.

11. Accountability, Verification and Reporting on Results
AR 4
Table of Contents

AR 4
Verification following Construction

Intent
Meeting the sustainability guidelines of the Building Commission requires verification at several steps in the process of preparing and implementing capital projects. The division will include data collected and verified from commissioning, post occupancy, and operation periods year 1, year 2, then transition to operating reporting using the reporting templates approved by the Commission. The division will also report on overall portfolio performance.

Requirements
Provide sufficient training to Owner/occupant.

Submittals

Potential Technologies & Strategies

11. Accountability, Verification and Reporting on Results
AR 5
Table of Contents

AR 5
Reporting on Construction Results

Intent
Meeting the sustainability guidelines of the Building Commission requires verification at several steps in the process of preparing and implementing capital projects. The division will include data and information on construction related items, such as recycling, avoidance of waste, and use of materials using the reporting templates approved by the Commission. The division will also report on overall portfolio performance.

Requirements

Submittals
Construction “as-built” report for each DOA project: Itemized listing of materials, quantities, sources, recycled content, materials recycled/reused, tons diverted from landfilling, project contractors/subcontractors, instruction manuals, etc

Potential Technologies & Strategies

History

In the fall of 2004 at a Wisconsin Building Commission meeting, Senator Roessler, a member of the Building Commission, asked DSF to add a sustainable design category to the DSF's Design and Construction Awards. The award was to be based on real performance and that performance is to be measured against a clear policy, guidelines and standards.

On October 6, 2004, the DSF began to develop a credible Wisconsin program for recognition of sustainable design and construction. A focus team was organized, a Policy Task Force made up of DSF staff, including architects and engineers, other DOA Divisions including the Division of Energy, other State Agencies, including Wisconsin Historical Society, the Department of Natural Resources, Department of Transportation, UW and people outside of state government including contractors, architects, engineers, environmentalist, developers and people in the field of energy. The Policy Task Force reviewed existing state information and the latest on sustainability to determine a future direction.

When the State Building Commission adopted the Sustainable Facilities Policy, it combined and integrated the following related policies that have long been included within the Building Commission policies and state statutes.

State of Wisconsin Building Commission Policy Manual sections: II.C, I.1, VII.B.3 (environmental protection); II.L (protection of earth's ozone layer); I.1, I.3, I.6(d) (compact development /public-mass transit); I.6.f, VII.B, IX.A, B. (re-use, preservation and maintenance of existing structures); VI (energy conservation); VII.B (health and safety);

Wis. Statutes: §13.48 (2)h.2.a (daylighting & renewable energy systems); and §16.855 (10p) (recycled materials in construction).

The Building Commission Sustainable Facilities Policy sets goals and direction. It does not prescribe a level of "performance", but makes reference to and relies upon "guidelines and minimum standards". DSF developed the Sustainable Facilities Guidelines and Minimum Standards following the Building Commission policy statement and prescribed how the Policy was to be implemented.

DSF already had policies, guidelines and standards established in the areas of energy conservation, air quality, water conservation, daylighting, recycling construction waste, use of recycled materials, commissioning, erosion control or within the DSF master specifications. Wisconsin Statues and DSF policy and procedures also address sustainability. In some cases, there were conflicts within our policies and standards. This became an opportunity to align everything, eliminate discrepancies and make our standards clearer.

A policy was developed but DSF did not take the Policy to the Building Commission until guidelines and standards were identified. DSF reviewed what was available throughout the industry and after careful consideration, chose to write DSF Sustainable Facilities Guidelines and Minimum Standards, basing them on LEED-NC Version 2.1 Rating System.

On April 19, 2006, the State Wisconsin Building Commission adopted the Building Commission Sustainable Facilities Policy and DSF Sustainable Facilities Guidelines and Minimum Standards. As of February 10, 2010 the title changed to "DSF Sustainable Facilities Standards" to accurately represent that these are minimum standards that apply to all projects.

Revisions

February 10, 2010a
- Broken hyperlinks corrected and minor edits.

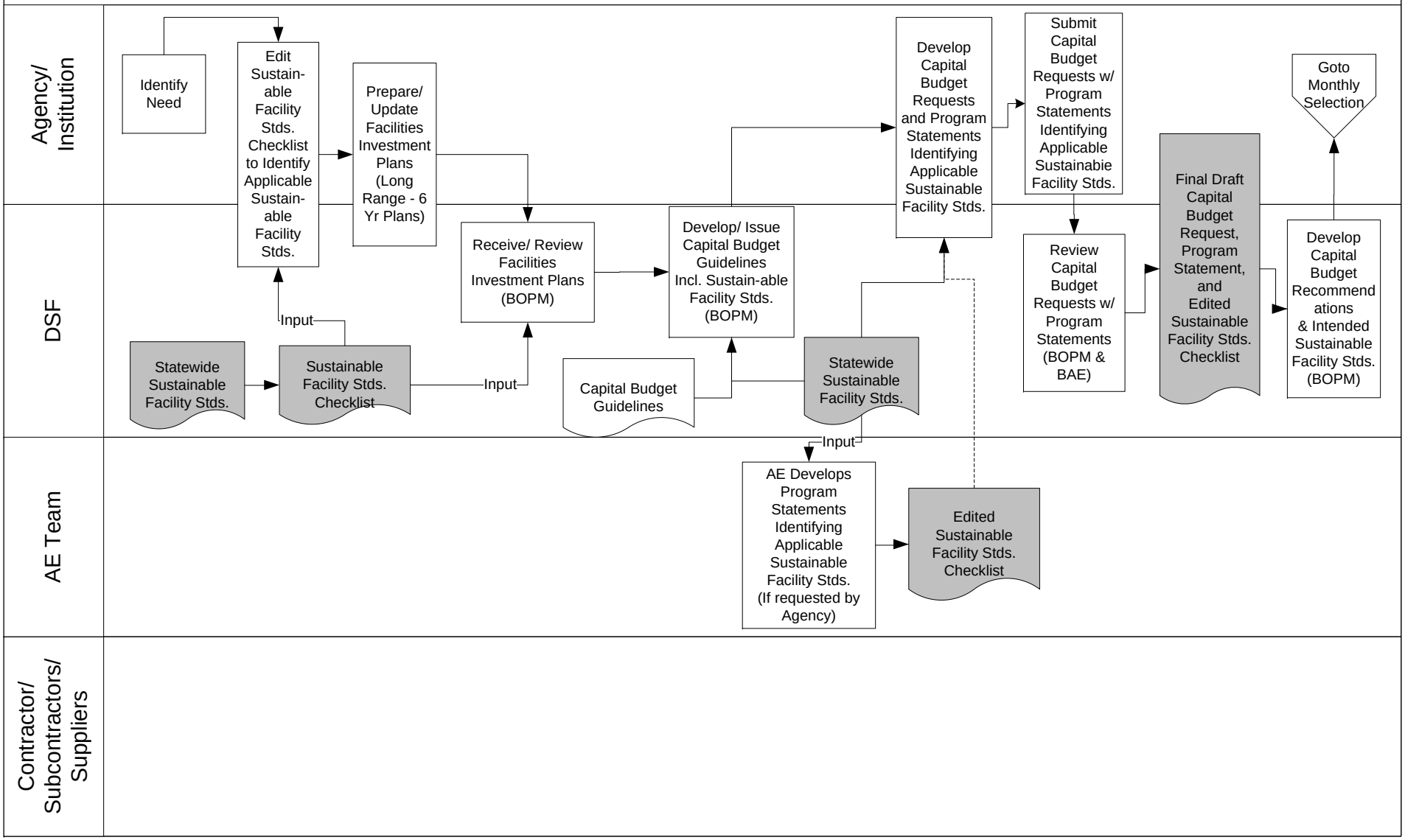
February 10, 2010
- Title changed to "DSF Sustainable Facilities Standards" to accurately represent that these are minimum standards that apply to all projects.
- Hyperlinks, margin reference for easier locating a Requirement and a printer friendly layout added for ease of use.
- Implementation Guide added to help users understand & incorporate the Sustainable Facilities Standards throughout project planning, site selection, design, construction and post occupancy

October 7, 2009
- EA-P1 revised to clarify DSF commissioning process
- EA C3 deleted (duplication of EA-P1)
- Hyperlinks included to the AE and Consultant's Policy and Procedure Manual

February 27, 2008
- EA-P3 revised to reflect the LEED 2.2 credit for CFC and HCFC reduction in HVAC & R equipment.
- AR6 deleted
- Check List replaced with new Check List

Traditional Project Lifecycle (Design, Bid, Build) W/ Sustainability Highlights

Capital Budget

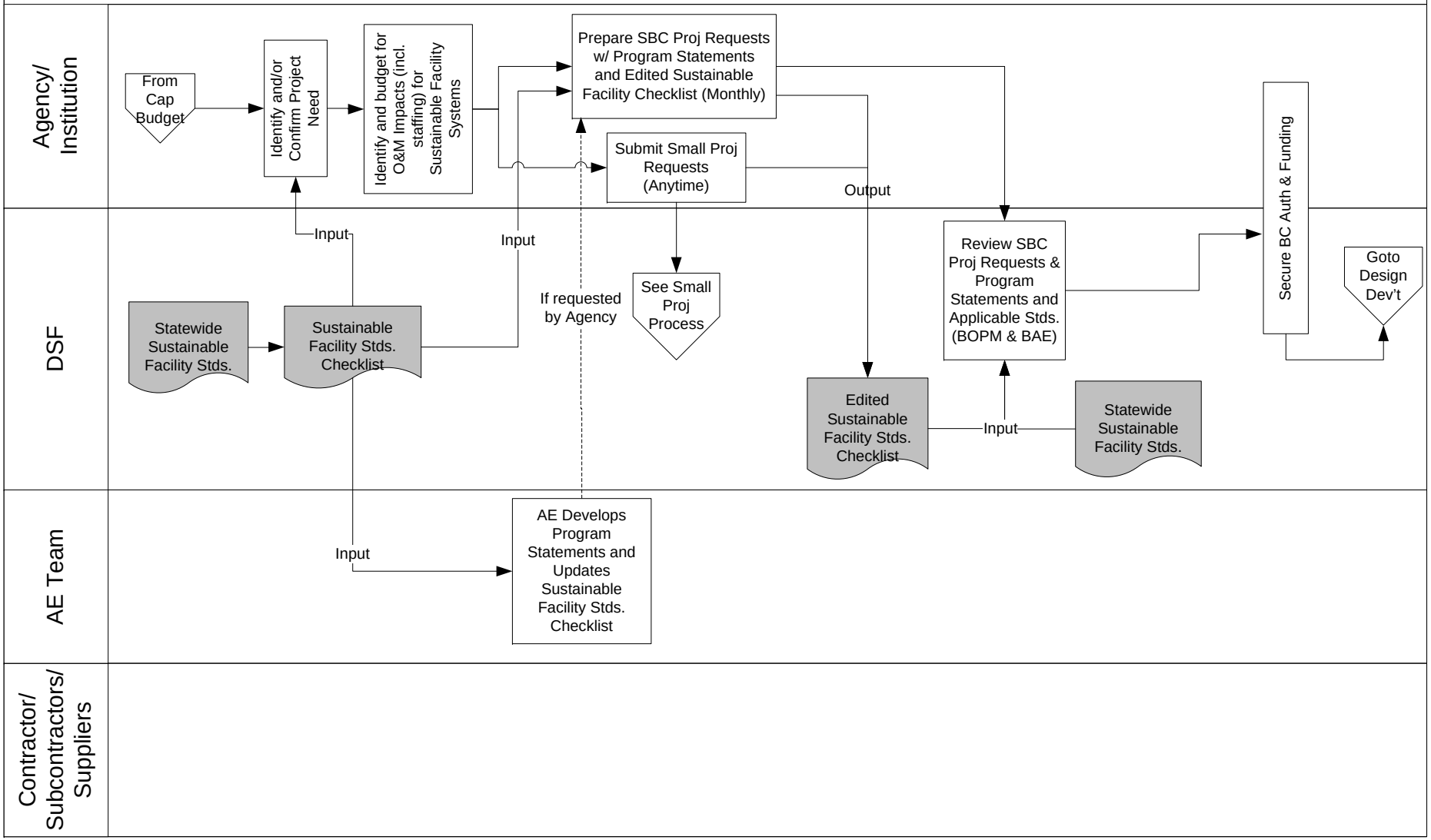


Capital Budget

2/16/2010

Traditional Project Lifecycle (Design, Bid, Build) W/ Sustainability Highlights

Monthly Building Commission

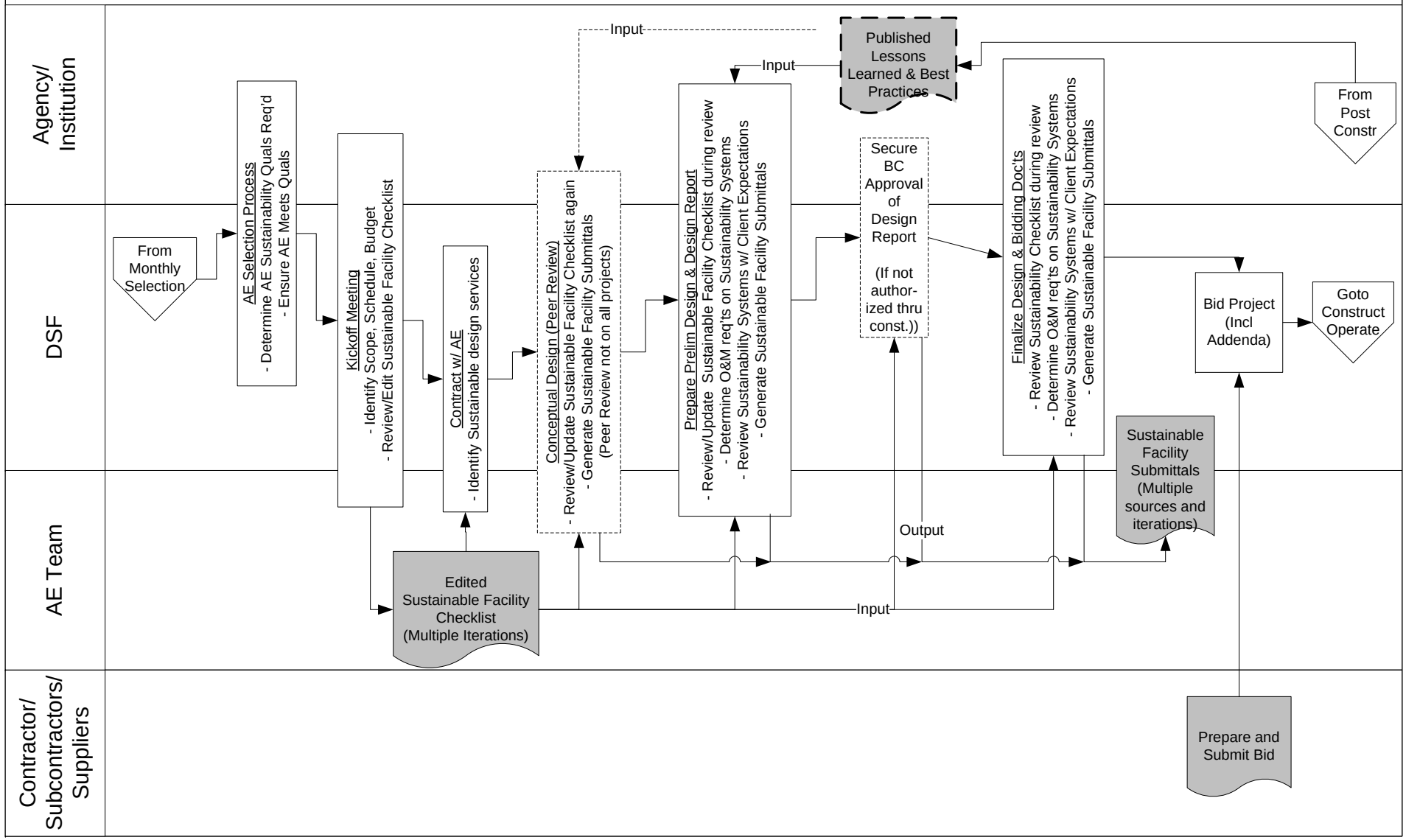


Monthly Building Commission

2/16/2010

Traditional Project Lifecycle (Design, Bid, Build) W/ Sustainability Highlights

Design Development & Bidding

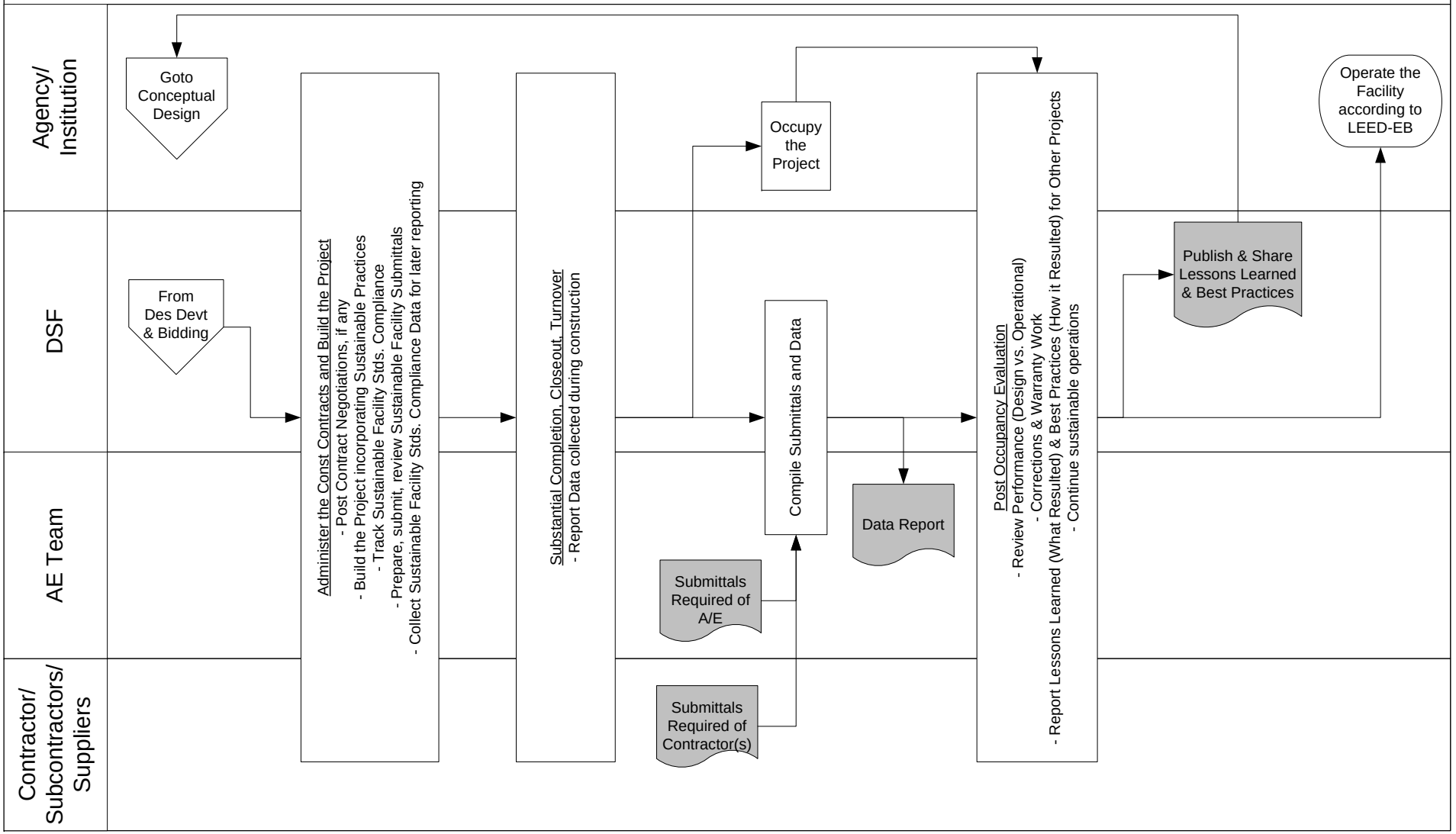


Design Development and Bidding

2/16/2010

Traditional Project Lifecycle (Design, Bid, Build) W/ Sustainability Highlights

Construct and Operate the Facility



Construct and Operate Facility

2/162010