

**Planning Tools**  
Revised 11-2005

# Campus Physical Development Planning Process

## Introduction

## Participants and Roles

## Planning Areas

## General Physical Planning Process

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### ► Introduction

#### Purpose of this Process Statement

To define in general terms an ongoing physical planning process and the minimum required products of the process.

#### Goal of the Campus Physical Planning Process

To promote responsible stewardship of university physical plant resources by maintaining a comprehensive Campus Physical Development Plan for each university, the UW-Colleges, and UW-Extension. The plans provide a context for continual maintenance and development of the physical plant and include both general purpose revenue supported and program revenue supported physical plant resources.

#### Definition of the Campus Physical Planning Process

The quality of a campus physical environment, its buildings, landscape and ambiance can enhance or detract from learning within a university community. The buildings and other facilities of a campus play a vital role in carrying out the missions of the UW System and its institutions. The quality of the physical facilities contributes immeasurably to the offering of quality educational and research programs and the overall image of the universities. The environment can create a sense of loyalty and pride in the university and form memories that last a lifetime. Planning succeeds when those who use a campus and those who participate in its creation learn to appreciate its value, understand its power to enhance the educational process and human life, and become active advocates for excellence in the built environment.

Sound physical planning must be responsive to the long-range direction of university programs by defining the facilities needed to support program delivery. Responsive planning means thinking beyond what may be newly required; making wise use of existing physical facilities, and encouraging decisions that favor long-term sustainability of the physical environment. All facilities are addressed in planning so all facilities continue to provide fiscally sound services in support of the broad mission of the institution. The stewardship role of planning involves making the most appropriate use of existing facilities, and seeking capital funding for major maintenance and renovation projects. Judicious planning will result in cost-effective measures to assure the highest and best use of all available resources.

Responsive planning for maintenance of facilities involves careful assessment of the condition of physical assets, as well as consideration of the age of these assets in

relation to the expected useable lives of their components. Stewardship involves seeking capital funding for major maintenance projects and implementing those projects in a timely manner so that facilities can continue to operate without disruption to the institution and its mission. Adequate operating budgets must be provided as well, to ensure appropriate on-going routine and preventive maintenance.

The Board of Regents has emphasized the importance of planning by revising the Campus Physical Planning Principles in September 2001. The Regents expect the principles to be applied in planning and to be periodically briefed on application of the principles.

The physical planning process provides an opportunity to ensure a physical environment conducive to learning. The benefits of good planning are both tangible and intangible. A facility that performs as an integral part of program delivery is a tangible benefit. Less tangible are the qualities of a campus that create a sense of place and community, a feeling about the campus that promotes learning. The campus should stimulate and support learning, meeting the needs of learners during their years of maturing, the years of heightened sensory and creative ability. An environment with such qualities promotes a sense of ownership for users, a greater pride in their environment and a heightened sense of history as time passes. The planning process should provide the opportunity for campus users to help define the physical campus. Each university is strongly encouraged to engage the entire university community in a "participatory" planning process.

Planning must also be sensitive of the need to provide a safe, secure learning experience, to preserve the natural environment and resources, define overall land use patterns, and provide for a cohesive, aesthetic campus exterior compatible with the needs of the larger community. It must identify building remodeling and new construction, define transportation and circulation needs, and determine utility and services requirements.

Providing adequate physical facilities can be divided into two basic components of campus planning and plan implementation. Planning defines all physical development issues and capital improvement projects to solve the problems. Plan implementation is the design and construction of capital improvement projects, solutions to planning issues that flow from planning.

### ► **Participants and Roles**

#### Institution

Campus planning is an institution responsibility with institution staff providing leadership and staff resources, defining the institution planning process and procedures. The process must include identification of issues, establishing planning priorities, evaluation of alternatives and recommending solutions. An effective planning process will involve a broad range of stakeholders to help assure comprehensive identification of planning issues. For program revenue supported projects involving rates or fees charged to students, stakeholders must include students.

### System Administration

System staff as partners can help facilitate planning by providing system and state policy direction, leadership, and technical support. System staff should participate in the evaluation of alternatives for addressing major planning issues. System Administration Capital Planning and Budget staff prepares the University System's biennial capital budget request for consideration by the Board of Regents, and State Building Commission and legislature.

### Board of Regents of the University of Wisconsin System

The Board of Regents of the University of Wisconsin System determines planning policy and establishes biennial capital budgets. It reviews funding requests and determines which capital improvement projects should advance to the State Building Commission for funding and implementation. Policy direction is provided by the Regents. The University System Campus Physical Planning Principles is an example of such policy.

### Division of State Facilities

The Division of State Facilities (DSF) prepares the state's biennial capital budget request on behalf of the governor. DSF is also responsible for the design and construction of approved projects, facilitating implementation by consulting with appropriate System and institution staff.

### State Building Commission

The State Building Commission directs the state building program, reviews capital improvement funding requests to determine which projects are to be implemented, and authorizes the release of funds for implementation.

### Host Community

Local communities provide water, sanitary and storm sewers, fire protection, law enforcement backup, and several other services to university campuses. Representatives of the local municipality should be involved in planning to define community concerns and requirements. Through active participation, community leaders and university staff can gain a better understanding of the other's problems, concerns and planning goals.

### General Working Relationships

Faithful to the concept of participatory or team planning, it is proposed institution and System staffs apply the following working relationships.

1. The initial steps of campus planning are an institution responsibility. Institution staff provide leadership and staff resources for on-campus planning.
2. System staff will support the planning by providing system and state policy direction and leadership, and by providing technical support.
3. The System Planning Office will facilitate System involvement in planning, working with each institution to help keep planning on schedule.
4. Planning activity is ongoing and concurrent across all planning areas, though it may vary in intensity depending upon the issues.

5. Regent action adopting a biennial budget marks the start of a new physical planning cycle. Institution and System staff should begin working on the next planning cycle as soon as possible following Regent action.
6. Different people may be involved at various times depending upon the planning issues and progress toward resolution of the issues. Generally, the number of people involved will increase as issues are clearly defined and the evaluation of alternative solutions begins. System staff will ask DSF staff to join the process as appropriate.

► **Planning Areas**

There are five primary physical planning areas in the University of Wisconsin System:

- A. Landholdings and Boundaries
- B. Building Space
- C. Exterior Space
- D. Transportation and Circulation
- E. Utilities and Services

These planning areas encompass all elements of the physical campus, and provide a structure for the orderly planning and management of a university physical plant. These planning areas can be defined differently to meet the individual needs of an institution. The degree of planning activity in each area is also at the discretion of each institution, depending upon the planning issues, condition of the physical plant, goals, and resources of the institution.

► **General Physical Planning Process**

Typically the unified efforts of an institution lead planning team consisting of institution, system, state, and host community staff result in the most effective planning. On occasion a planning consultant may be retained to assist and bring special expertise to the process. An institution lead team clearly places each institution in control of its planning functions. Through a team effort, system and state staffs have an opportunity to understand planning issues while providing policy and technical consultation. The team approach also helps to ensure the institution, System Administration, and the Division of State Facilities (DSF) jointly support proposed capital projects. In a practical sense, the task of justifying projects and ultimately capital budgets can be accomplished during the planning process through participation of all levels of the university and state government in the planning process. Implementation of defined projects then becomes a function of University system-wide priorities and the availability of financial resources.

Planning is an ongoing, iterative process of identifying the issues or problems, setting priorities, gathering information, and evaluating alternatives. Each iteration can result in a restatement of issues and/or priorities, gathering more information, and evaluating additional alternatives.

As planning progresses, various documents must be prepared to facilitate communications. As the time approaches for assembling a biennial capital budget, project lists, request documents and other budget materials must be written to define funding requests to the Board of Regents and State Building Commission. Formats for the required documents are included in this guide.

The planning process has been defined to include eight fundamental steps. The General Physical Planning Process Diagram helps illustrate the process.

1. Understand Program Directions

Campus facilities provide the physical environment for teaching, research, learning, and living, social and all other activities and events that enable a university to thrive. Understanding the nature and goals of the ever-evolving university mission and programs is the necessary starting point for effective planning to sustain the appropriate physical environment.

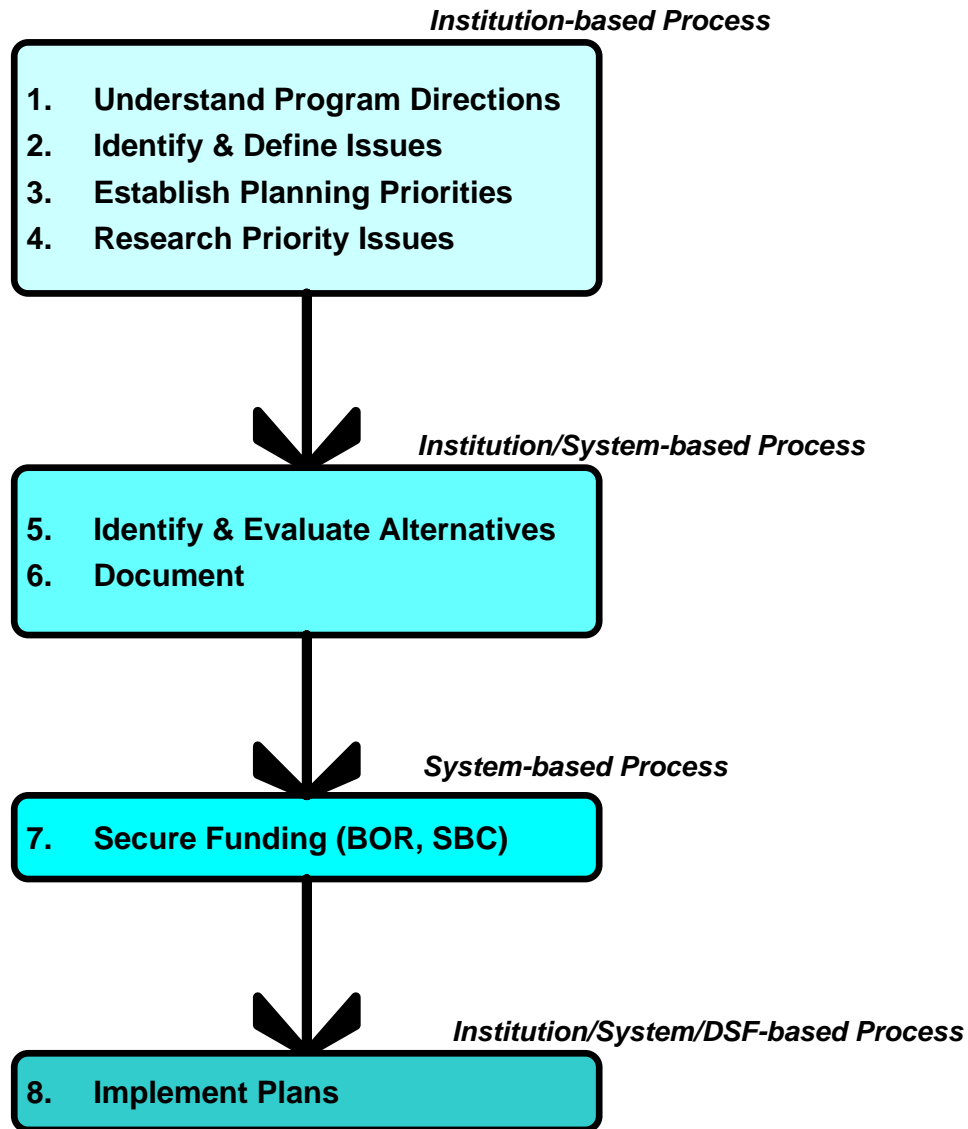
2. Identify and Define Planning Issues

Capital improvement construction projects provide a means to improve, enhance and correct deficiencies in the physical plant. A clear understanding of the problems and deficiencies that inhibit delivery of university programs explain the need to undertake such projects. A comprehensive inventory of planning issues is typically assembled from a survey of all campus constituents including all campus departments, system staff, and the university's host city. Planning issues should be compiled in two major categories:

- a.) Program Related Issues - deficiencies or problems in physical elements of the campus that *directly* inhibit the delivery of university programs. Examples include functionally obsolete classrooms or laboratories; shortages of space for teaching, research, or storage; inadequate, obsolete, malfunctioning or unsafe major or fixed equipment; lack of teaching technology in classrooms and labs; lack of cabling for technology; inadequate lighting controls; absent or inadequate safety equipment; worn-out or deteriorated furnishings; obsolete kitchens in student centers or dining facilities; a shortage of residence hall space.
- b.) Infrastructure Related Issues - deficiencies or problems in the network of the physical *supporting* elements of a campus. Examples include deteriorating or defective building envelope such as windows, walls, roofs, foundations; mechanical systems such as heating, cooling, ventilating, plumbing, fire and other health and safety matters, electrical, communications; walks, roadways, exterior lighting.

# General Physical Planning Process

## University of Wisconsin System



3. Establish Planning Priorities

There are never enough financial resources to correct all deficiencies in a campus physical plant. Consequently, those causing the greatest problem must be addressed first. The order of correcting problems should reflect the relative importance of resolving specific issues to the institution as a whole. The higher priority issues should be those that when resolved, will have the greatest positive effect on the institution and the fulfillment of its mission.

4. Research Priority Issues

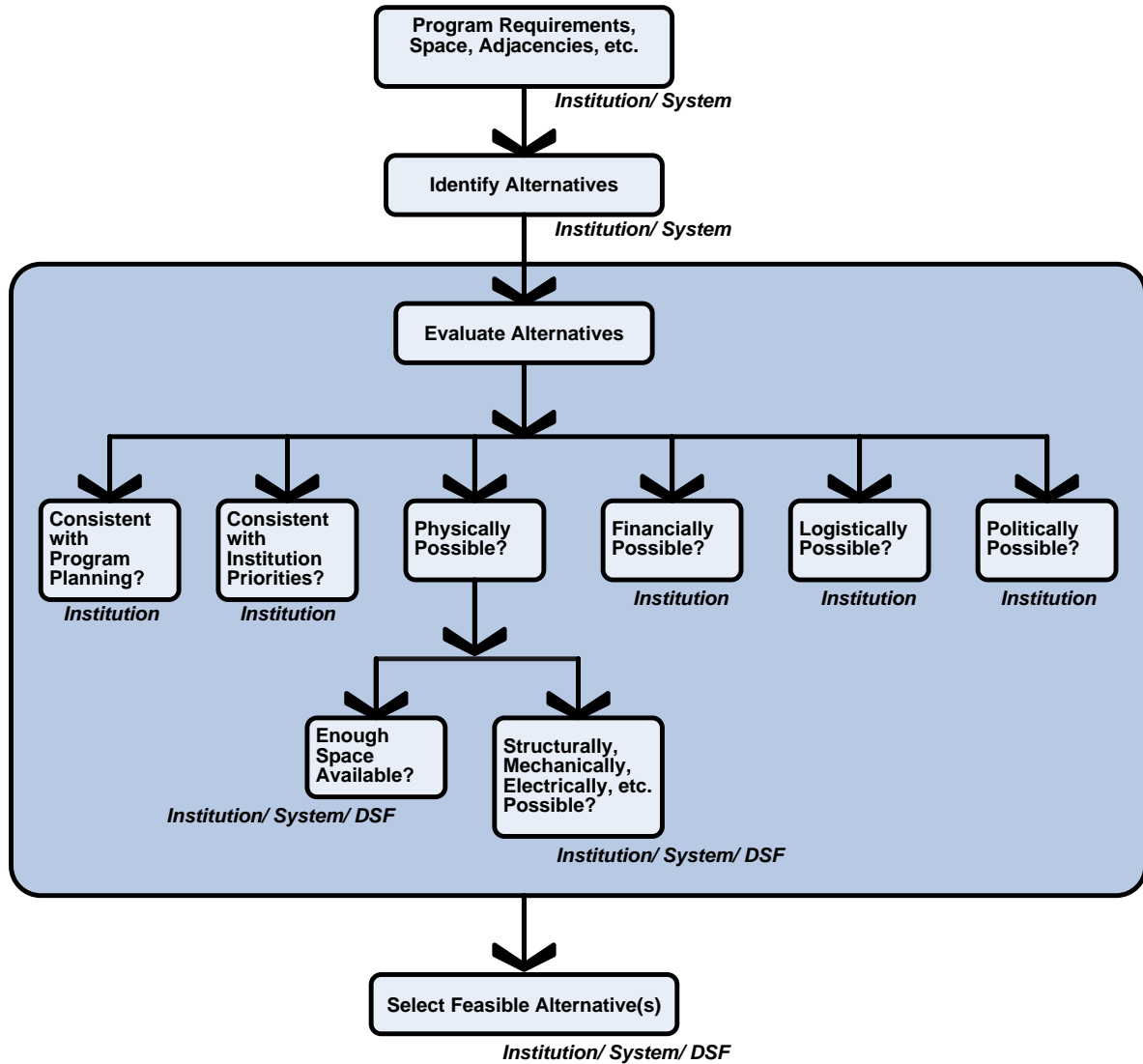
While the issue lists identify problems, the higher priority issues in particular must be clearly understood. Discussing the issues with the person(s) who identified them provides an opportunity to understand the problems. Special studies may help clarify needs or define planning factors or standards. It is often helpful for institution and system staffs to join together in this process. System staff can help clarify system and state policies, bring expertise gained from working across the university system, and help determine the likely method of resolving and funding solutions to the issues.

5. Identify and Evaluate Alternative Solutions

All reasonable responses to each planning issue must be defined, and the advantages, disadvantages and costs of each evaluated. Institution and system staff should join together in this process, involving DSF staff as appropriate. Priorities established earlier may need adjustment to accommodate the nature of projects, costs, and timing of construction. Priority adjustments can minimize disruption of campus operations during construction.

Planning is an ongoing, iterative process of identifying the issues, setting priorities, gathering information, and evaluating alternatives. Each iteration can result in a restatement of issues and priorities, gathering more information, and evaluating additional alternatives.

# Physical Planning Alternative Evaluation Process



6. Document

The findings of the planning process must be documented to communicate them within the university community and beyond. Documentation must enable an uninformed person to understand the comprehensiveness of the planning process, the planning issues, the alternatives considered, the recommended solutions and supporting reasoning.

7. Secure Funding

A primary responsibility of System Administration is to prepare a capital budget recommendation for consideration by the Board of Regents and State Building Commission. Activities include but are not limited to the definition of recommended system project priorities, documenting the funding request, and presenting the budget to the Regents and Building Commission. These activities are managed and primarily expedited by Capital Planning and Budget staff in System Administration.

8. Implement Plans

Following initial approval of funding by state government, institution staffs are responsible for initiating implementation of defined projects. System Capital Planning and Budget staff participates in preliminary design of all large projects and facilitates Board of Regent and Building Commission actions.

## **Building Space Planning (non program revenue)**

**General Process** (including typical building efficiency factors)

**General Assignment Classroom Planning**

**Science Laboratory Planning**

**Office Planning**

**Space Tabulations**

**Origin/Destination Chart**

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### ► **General Process**

#### Purpose of this Space Planning Section

To define planning tools useful in evaluating and defining future space needs, primarily building space. It is the goal of the university and the state to minimize the amount of space constructed while providing appropriate functional space.

#### Participants and Roles

Space planning is an institution responsibility and part of comprehensive long range campus planning. University System Administration Capital Planning and Budget staff are available to provide guidance and assistance, particularly regarding system-wide practices and guidelines.

#### Square Footage Calculations

In order to arrive at the correct amount of space needed there should be an understanding of building measurement terms. UW-System uses classifications from the *Postsecondary Education Facilities Inventory and Classification Manual*, which can be downloaded from the Society of College and University Planners (SCUP) website at <http://www.scup.org>. The following is a summary from the classification manual.

Gross Square Feet (GSF): This is the space enclosed within the exterior walls of a building and includes ASF, NASF and structural elements such as walls and columns. It can be measured or alternatively calculated using an efficiency factor.  $GSF = ASF \times (1/EF)$  where EF is the anticipated efficiency factor expressed as a whole number, for example 68.

Assignable Square Feet (ASF): This is space that can be assigned to people or programs. It is the usable space that can be measured from the inside of the walls. In planning this is the starting point for calculating the size of projects. Space Tabulations always reflect ASF.

Non-Assignable Square Feet (NASF): This is space that is essential but not assigned directly to people or programs. It includes such functions as circulation, mechanical rooms, restrooms, and custodial closets. In planning these spaces usually are not listed, but are part of the GSF of a building which is figured using an efficiency factor. On occasion, it may be helpful to list specific NASF spaces to make sure that they are

included when the project is designed. These spaces should not be included with the ASF when calculating efficiency.

Efficiency Factor (EF): This number is the ratio of usable space to the total gross space. It is calculated by dividing the ASF by the GSF. Although it is desirable to have as an efficient building as possible, realistic efficiencies, based on the building type and other planning factors, must be used when arriving at a project size. Other planning factors include building shape based on site and design constraints, limitations of existing building layouts for remodeling projects, and the need for extensive mechanical equipment. UW System staff can provide guidance to institution staff in choosing an efficiency factor. See the appendix "Typical Efficiency Factors".

### **Typical Building Efficiency Factors**

<b>Space Category</b>	<b>Efficiency Percent</b>
Classroom Building	65
Academic – Multi Use	65
Fine Arts Auditorium	65
Fine Arts Instructional Labs	62
Food Service Building	65
Laboratory Space	
- Instructional Dry Lab	60
- Instructional Wet Lab	60
- Research Lab	58
- Animal Space	55
- Computer Lab	65
- Instructional Greenhouse	80
- Research Greenhouse	80
Library	75
Office Buildings	65
Physical Education Buildings	70
- Arena	78
- Field House	75
- Pool	78
Residence Hall	
- Semi-Suite Style	82
- Suite/ Apartment Style	78
Student Union	60
Agricultural Buildings	85
Service and Maintenance Buildings	85
Storage Buildings	
- Unheated	95
- Heated	95
Parking	
- Freestanding ramp	55
- Ramp beneath building	52

## ► **General Assignment Classroom Planning**

### Description of a Classroom Long Range Planning Process

The quality of general assignment classrooms plays a vital role in carrying out the educational mission of the UW-System and its institutions. Classrooms are the primary teaching space for most academic departments and represent a major category of space. General assignment classrooms are rooms that are by design and equipment available for use by any department. Unlike laboratories they are not equipped for specific disciplines so as to preclude use by other disciplines. In order to minimize the total number of classrooms needed and maximize utilization of classrooms, scheduling should be under the control of the registrar.

Classroom planning must be responsive to the long-range direction of education programs, incorporating anticipated instructional needs and providing flexibility to accommodate unanticipated instructional needs. It involves making the best possible use of existing facilities, seeking capital funding for upgrading classrooms, and maintaining adequate operating resources to ensure appropriate routine maintenance and technology equipment replacements.

Similar to general long range campus planning, defining classroom needs is an ongoing process of identifying current and future classroom demand, setting priorities, and evaluating alternatives for providing necessary classrooms. Defining classroom needs requires assessing the adequacy of existing classrooms and measuring the demand for classrooms by capacity. Completion of a classroom assessment and a classroom demand analysis provides the primary information necessary for developing the classroom portion of a comprehensive long range campus development plan. Along with all other classroom planning issues, the assessment and demand analyses provides a complete picture of classroom needs. Frequently UW-System staff joins the institution in the process, involving DSF staff as appropriate.

After classroom information has been gathered, a plan can be developed to resolve classroom deficiencies. Frequently the demand analysis will demonstrate an imbalance between the number of classrooms required of any given capacity and the available rooms. Solutions may range from minor remodeling to new construction. Frequently it is necessary to reallocate and remodel space to achieve the proper mix of classrooms by size. For this reason, resolving classroom problems must be done as part of the evaluation of alternatives for resolving all other space planning issues across the total campus.

### Assessment of Existing General Assignment Classrooms

A first step in classroom planning is to clearly understand the problems and deficiencies of existing classrooms, and of rooms being considered for conversion to classrooms. The assessment establishes an inventory of available classrooms and their attributes, and facilitates categorizing them according to their quality. A schedule such as the one titled "Classroom Assessment" can be a useful tool for evaluating existing classrooms.

**Diagrams of optimal classroom designs for various occupancies are available in the appendix.** The following is an example of a Classroom Assessment chart showing the attributes to be evaluated.

<b>General Assignment Classroom Assessment</b>												
<b>University of Wisconsin - <i>institution name</i></b>												
<b>Date</b>												
<b>Building</b>	<b>Room No.</b>	<b>Room Length</b>	<b>Room Width</b>	<b>Room Area</b>	<b>Aspect Ratio</b>	<b>Ceiling Height</b>	<b>Room Category</b>	<b>Cap @ 25 sf</b>	<b>Current Capacity</b>	<b>Current Seating Type</b>	<b>Tech-nology Level</b>	<b>Comments</b>
Smith	221	45	27	1215	0.60	9'	B	48	80	Tab arms	0	1,2
Smith	223	35	27	945	0.77	9'-6"	A	38	65	Tab arms	2	2
Smith	225	35	25	875	0.71	9'-6"	A	35	36	Tables	3+	4
Smith	230	30	50	1500	1.66	10'-0"	B	60	50	Tab arms	2	3
Smith	236	30	45	1350	1.5	10'-0"	A	54	54	Tables	3+	4
Smith	305	38	30	1140	0.79	8'-6"	B	46	50	Tab arms	2	5,6

<b>Comments</b>	
1	Excessive HVAC noise from adjacent mechanical room
2	Non-ADA accessible teacher platform in front
3	Current capacity of 75 does not meet code; with one exit legal capacity is limited to 50. Not possible to add second exit.
4	Upgraded in 2003
5	Ceiling too low for proper mounting of screen
6	Column blocks views in room

The schedule is organized to list each room individually along with its attributes. The information will be used later in the classroom planning process. A working schedule can be easily created using Excel.

#### Attribute Definitions

1. Building: Identification of the building where classroom is located.
2. Room No.: The number uniquely identifying the room within the building.
3. Room Length: The length of the room as measured from the front of the room (where the teaching station is located) to the back.
4. Room Width: The width is the measurement across the room.
5. Room Area: The number of square feet calculated by multiplying the length times the width.
6. Aspect Ratio: The ratio of width to length calculated by dividing the width by the length.
7. Ceiling Height: Current height of the room ceiling at the front of the room (where the teaching station is located).
8. Room Category: The clustering of classrooms (and rooms being considered for conversion to a classroom) into two groups based on their aspect ratio and ceiling height.

#### Category A:

Rooms that are or can become excellent classrooms for long term use because the aspect ratio and ceiling height and other architectural aspects are appropriate

#### Category B:

Rooms that are not or cannot become good classrooms because of poor aspect ratio, inadequate ceiling height, or other inherent architectural deficiencies. (Such deficiencies could include such things as columns within the space, poorly located entrances, non code-complying exiting, or locations in damp basements.)

- Aspect ratio:

Rooms with a ratio between 1:0 and 1:5 are preferred for "Category A" classrooms. Rooms with ratios less than 0.67 or greater than 1.5 probably cannot be good classrooms and should be considered "Category B" rooms for purposes of classroom analysis.

- Ceiling height

Ceilings at the front of the room should be a minimum of nine feet (9') for general assignment classrooms to accommodate instructional technologies. For classrooms above 45 occupants, a ten foot (10') ceiling is minimum. Rooms with ceiling heights less than these minimums should be categorized "B".

9. Capacity at 25 square feet per student station: The number of student stations the room will accommodate calculated by dividing the room area by 25. The average unit measure of 25 sq. ft. per student station should be used for general assignment classroom planning. While tablet arm chairs will fit in rooms with as

little as 15 sq. ft per station, while classrooms equipped with tables and chairs and current technology may require as much as 28 sq. ft per station for smaller classrooms.

10. **Current Capacity:** The current number of student stations in the room as determined by a simple count or by data from the registrar. If current capacity exceeds building code limits, the code limit capacity should be used.
11. **Current Seating Type:** The type of seating currently in the room, e.g., tablet arm chairs.
12. **Technology Level:** The level of instructional technology installed in the room as defined in March, 2000 by UW-System Administration with input from the Educational Media Technology Council.
  - Level 0:** Does not meet the minimal technology standards defined as Level 1.
  - Level 1:** Basic classroom containing chalkboard or marker board; projection screen; overhead projector; lighting fixtures switched in groups; darkening shades; voice and data connections; podium, cart or lectern. These rooms are “portable ready,” implying that any combination of portable equipment could be brought into the room.
  - Level 2:** Classroom with all the features of Level 1 plus instructional technologies, such as a VCR, TV, sound system, DVD player, CD player, etc. Room lighting system should be appropriate for note-taking during video presentations.
  - Level 3:** Classroom with all the features of Level 2 plus video/data projector and a teaching station with nearby access to controls for all A/V equipment, room lighting and room sound system. Wired network connectivity at each fixed seat or fixed table type student station may be included in this category.
  - Level 3+:** Classroom with all the features of Level 3 plus a teaching station with an electronic touch screen for control of all A/V and room functions.
  - Distance Learning Level:** Classroom equipped with a two-way video system to support distance education.
13. **Comments:** As needed for clarity.

### The Classroom Demand Analysis

A second step in classroom planning is to determine how many classrooms are needed of any given capacity. This exercise profiles current class-section sizing patterns as a starting point for determining the mix of classroom sizes necessary to support all departments. By definition all general assignment classrooms are available to all departments and are scheduled under the direction of the registrar. *In the interest of maximizing the utilization of space, classroom planning anticipates each classroom will be used at least 35 scheduled periods per week with a percentage of student stations occupied based on a sliding scale as described in 4. Required Room Capacity below.*

Upon completing the demand analysis through the "required number of rooms" column, the analysis may need to be "tempered or adjusted" for anticipated changes in class

scheduling patterns. While it is very difficult to predict pedagogy and/or program offerings, a reasonable effort must be made to anticipate teaching/learning environment changes since facility configurations are infrequent, 30-plus years. Adjustments in favor of larger classrooms are generally preferred, since larger classrooms provide greater long-term flexibility by being able to accommodate both smaller and larger section sizes. The "adjusted required rooms" offers an opportunity to compensate for anticipated changes in classroom demand.

Classroom needs are typically based on fall semester data since fall semester enrollments are usually larger than other academic terms. While facilities planning must consider the largest anticipated demand, compromises must be made to minimize the total space constructed and to maximize space utilization. The following is a sample of a classroom demand analysis.

The information will be used later in the classroom planning process. A working schedule can be easily created using Excel.

<b>Classroom Demand Analysis</b>									
<b>UW - institution name</b>									
<b>Acad Term</b>		<b>Date</b>							
<b>Section Size Range</b>	<b>Tot Sect</b>	<b>Total Rm Pds</b>	<b>Reqd Rm Cap</b>	<b>Reqd No Rms</b>	<b>Adjusted Reqd Rooms</b>	<b>Rms Avail</b>	<b>Bal</b>	<b>Adjustmts</b>	<b>Adjusted Balance</b>
1--15	132	397	23	13.2		8	-5.2		-5.2
16--25	301	930	38	31.0		71	40.0	-14	26.0
26--35	277	854	53	28.5		22	-6.5	6	-0.5
36--45	258	743	60	24.8		8	-16.8	2	-14.8
46--55	85	247	73	8.2		0	-8.2	1	-7.2
56--65	11	33	86	1.1		1	-0.1		-0.1
66--75	10	28	94	0.9		1	0.1		0.1
76--85	6	11	106	0.4		1	0.6		0.6
86--95	5	16	109	0.5		0	-0.5		-0.5
96-105	5	14	121	0.5		4	3.5		3.5
106+	16	36	111+	1.2		2	0.8		0.8
Totals	1106	3309							

Required room capacity see table  
 Required no. of rooms = total room periods/35 hours

1. **Section Size Range:** The number of students in the course-sections included in each category. With the exception of the first and last ranges, the example groups course-sections by increments of 10 students. The increments can be adjusted to better reflect institution practices, though experience with this analysis tool suggests increments of 10 works very well. Institutions with more large sections should add more ranges to provide a better profile of the larger sections.
2. **Total Sections:** The number of sections in the Section Size Range requiring the use of general assignment classrooms. Only those sections that are taught in general assignment classrooms are included. This information is normally available only from the registrar's records.

3. Total Room Periods: The cumulative number of scheduled weekly full-time-equivalent (FTE) teaching periods of all sections included in the range. If the normal teaching period for the institution is 50 minutes, 50 minutes equals one period. Fractions of 50 minute periods are counted as proportional fractions of one period. For example, a section that meets twice a week for 75 minutes each meeting generates 3 weekly room periods ( $75+75=150$ ,  $150/50=3$ ). This information is also normally only available from the registrar's office. (Caution must be taken when using this data to verify that the data accurately reflects actual demand. "Stacked courses" and other scheduling practices may inaccurately increase demand.)
4. Required Room Capacity: The number of student stations that must be in the room to accommodate the largest section to be scheduled in the room, the upper limit of the section size range, plus a margin for scheduling variations. This is one point where planning can cushion the effects of the permanent nature of facilities, changes in teaching/learning needs, and the impossibility of scheduling sections to exactly match the number of student stations in every room across an entire campus. The "cushion" is provided by intentionally sizing room capacities to exceed measured demand. The "cushion" is a sliding scale that provides a greater margin in smaller rooms and less of a margin in larger rooms. The variable margin prevents over sizing larger rooms resulting in better utilization of space. The following table provides a guideline:

Section Size	Planned Utilization	Multiplier	Required Room Capacity
Up to 35	67 % occupancy	1.5	Up to 53
–36-65	75% occupancy	1.33	–48-86
66-85	80% occupancy	1.25	–83-106
86-105	87% occupancy	1.15	99-121
Over 105	95% occupancy	1.05	Over 110

5. Required Number of Rooms: The number of rooms necessary to efficiently accommodate the total number of room periods in the section size range. Efficiency is defined as each room used a minimum of 30 periods per week. The number of rooms required for each range is the quotient of dividing the total room periods for the range by 30 periods.
6. Adjusted Required Rooms: The required number of rooms adjusted for anticipated changes in teaching practices and patterns. As the required rooms are based on the number of room periods, adjustment of required rooms must be based on anticipated changes in room periods.
6. Rooms Available: The number of general assignment classrooms available to meet the requirements of each section size range. All "Category A" general assignment classrooms as established in the General Assignment Classroom Assessment must be included in the count of available rooms for one of the section size ranges. Each room should be assigned to a "range" based on its capacity. Since the capacity of most existing classrooms will not exactly match

- one of the calculated required capacities, each existing classroom should be included in the range closest to the calculated required capacity for a range.
7. **Balance:** The difference between the required rooms and rooms available for each range (available rooms minus the required rooms). Balances of zero indicate spaces matching demand.
  8. **Adjustments:** Proposed or planned changes to the inventory of classrooms in each range. Changes can result from actions such as remodeling, reassignment of rooms, adjustments the capacity of rooms or construction of new classrooms. Typically the adjustments are recorded concurrent with ongoing campus-wide space management and space planning activities.
  9. **Adjusted Balance:** The sum of the balance and adjustments (balance plus adjustments). Adjusted balances reflect the impact of planned changes in classrooms resulting from actions such as remodeling or new construction.

### ► **Science Laboratory Planning**

#### Description of a Science Laboratory Long-Range Planning Process

The quality of science laboratories plays a vital role in carrying out the educational mission of the UW-System and its institutions. After classrooms, laboratories are the primary teaching space and represent a major category of space. Typically they are equipped for specific disciplines so as to preclude use by other disciplines. Therefore, scheduling is typically under the control of the department responsible for the disciplines involved.

Science laboratory planning must be responsive to the long-range direction of education programs, incorporating anticipated instructional needs and providing flexibility to accommodate unanticipated instructional needs. It involves making the best possible use of existing facilities, seeking capital funding for upgrading laboratories, and maintaining adequate operating resources to ensure appropriate routine maintenance and technology equipment replacements.

Since laboratory space is the most expensive space to construct, operate and maintain, planning efforts should strive to minimize the amount of laboratory space constructed. Therefore, when planning laboratories within a discipline, it is desirable to minimize specialization of laboratories, opting instead to plan laboratories that can be used for instruction for a variety of courses within the discipline, or even across disciplines. Typically, it should be possible to accommodate a wide range of instruction within a discipline by constructing one type of laboratory for lower division courses, and another type of laboratory for upper division courses. Specialized laboratories can then be limited to those accommodating extensive or specialized equipment, having specialized environmental or utility needs, or used for specialized research or project purposes. Examples of specialized laboratories might include biological tissue culture rooms, animal holding spaces, aquatic biology instructional labs, analytical chemistry labs, or physics optical equipment labs.

Laboratory planning should assume a minimum of 24 scheduled periods per week per laboratory. Depending on the discipline and the size of the institution it may not be possible to achieve this level of scheduled use in all laboratories. However, additional laboratories of a given type should not be planned unless this threshold is anticipated to be exceeded for the existing laboratories of that type. Unlike classroom planning it is expected laboratories will be used at full or nearly full capacity. Therefore laboratory capacities should be planned based on the maximum section size anticipated.

Science laboratory planning should be informed by current university system and national planning trends, including the following.

1. Laboratories that are more generic, multifunctional, flexible, and easily adaptable to change, including increased use of casework that is easily movable/ removable.
2. Accommodation of networked computers and other electronic analytical and instrumentation devices at or adjacent to lab benches.
3. Decreased use of chemicals and a related decrease in the need for fume hoods.
4. Minimizing instructional laboratory down time by setting up supplies and experiments on carts in stock/preparation rooms.
5. Increased need for highly specialized, dedicated laboratories for faculty/student research. Typically research rooms will be generically designed spaces that will be shared by faculty and students and easily adapted to changing needs.

Similar to classroom planning, defining laboratory needs is an ongoing process of identifying current and future demand, setting priorities, and evaluating alternatives for providing necessary laboratories. Defining science laboratory needs requires assessing the adequacy of existing laboratories and measuring the demand for laboratories by capacity, similar to the process used for classroom planning. Frequently UW-System staff joins the institution in the process, involving DSF staff as appropriate.

## ► **Office Planning**

### Description of an Office Long-Range Planning Process

The quality of offices plays an important support role in carrying out the educational mission of the UW-System and its institutions. Properly designed faculty offices, located so they are easily accessible to students and to instructional spaces, can enhance faculty instructional preparation, research, and advising to students. Properly designed offices for student services can enhance access of these services to students and increase the efficiency of delivery of these services. Properly designed administrative offices can increase the efficiency of those operations.

Office planning must be responsive to the long-range direction of the institution, incorporating anticipated needs and providing flexibility to accommodate unanticipated needs. It involves making the best possible use of existing facilities, including utilizing spaces that are no longer capable of meeting current instructional needs, but are suitable for conversion to office functions. However, use of basements, attics, or windowless

spaces for offices should be avoided. Planning for offices should allow for growth and change by allocating a number of unassigned offices, perhaps an additional 10% beyond immediate needs should be considered.

Since closed private offices are more expensive to construct, operate and maintain than open offices, use of private offices should be limited to occupants whose function requires the security, privacy or confidentiality that a private office affords. Faculty, upper level administration such as deans and directors, and advising and counseling staff will normally have private offices. Support and clerical staff will normally be located in open office areas with systems (modular) furniture. For part-time or adjunct faculty, sharing of closed offices may be appropriate. Where provided, graduate student offices should also be shared. The following office planning guideline has been approved by the system president.

Since systems furniture provides a larger amount of work surface and more efficient storage than conventional furniture, use of such furniture should be considered for closed private offices as well as open offices. Except as noted in the guidelines closed offices should not be over-sized to accommodate conferencing. Instead an adequate number of shared-use conference rooms should be allocated for meetings of four or more people.

### Open Office Planning

Although use of open offices can result in efficient use of space, care must be taken to allocate sufficient space to accommodate functional needs. Since the typical systems furniture module contains minimal space for files, additional area for files must be added either to the individual modules or as a dedicated file area. However, since file cabinets can consume large amounts of space, consideration should be given to how much filing needs to be in the immediate work area, and how much can be archived in other areas in the building or on campus. In order to provide adequate circulation within an open office area, a multiplier of 1.4 should be applied to the subtotal of areas within open offices to arrive at the total amount of office and circulation space.

The UW-System Office Planning Guideline on the next page was developed under direction from the president of the university system. Both the university and state seek to minimize the amount of space constructed while providing adequate functional space. The amount of space directly affects operating costs. As the amount of space increases, so do costs associated with heating, cooling, lighting, maintenance and housekeeping. Every operating dollar not used for operations of the physical plant can be made available to directly support the instructional mission of the university.

### **UW-System Office Planning Guideline**

<b>Title</b>	<b>Area</b>	<b>Notes</b>
President	500	400 office + 100 in-office conference
Vice President	400	300 office + 100 in-office conference
Assoc/Asst VP	200	150 office + 50 in-office conference
Board Secretary	200	150 office + 50 in-office conference
General Counsel	200	150 office + 50 in-office conference
Director (closed office)	150	modular furniture
Staff, confidential (closed office)	120	modular furniture
Staff (open office)	80	modular furniture
Clerical	80	modular furniture
File (1/clerk station)	90	1/clerk station
Reception (1/area)	100	1/area
Chancellor	400	300 office + 100 in-office conference
Vice Chancellor	300	200 office + 100 in-office conference
Asst/Assoc Chancellor	200	150 office + 50 in-office conference
Dean	185	135 office + 50 in-office conference
Chair/Faculty	135	standard furniture
Chair/Faculty	120	modular furniture
Director (closed office)	120	modular furniture
Staff, confidential (closed office)	120	modular furniture
Staff (open office)	80	modular furniture
Clerical	80	modular furniture
File (1/clerk station)	90	1/clerk station
Reception (1/area)	100	1/area
<b>File Planning Areas</b>		
Letter File Cabinet	7	18" x 52"
Legal File Cabinet	7	20" x 52"
Book Case	3	12" x 36"
42" Lateral File	11	42" x 36"
Storage Cabinet	8	36" x 30"

► **Space Tabulations**

A useful planning tool when working with university departments to clearly document space needs is a space tabulation. The format below offers a method of recording required and available space for each component of a department. Completion of a space tabulation for each department provides a solid base of information for campus wide planning. Tabulations provide an inventories of department space at a detailed level as an aid in making space reallocation decisions and defining capital improvement projects. When it becomes time for project implementation, time to prepare a request for architectural/engineering design services, the tabulation serves as the central item around which requests are written. The available space should be taken from the campus wide building space inventory while required space must be developed through consultation with faculty and staff. A working schedule can be easily created using Excel.

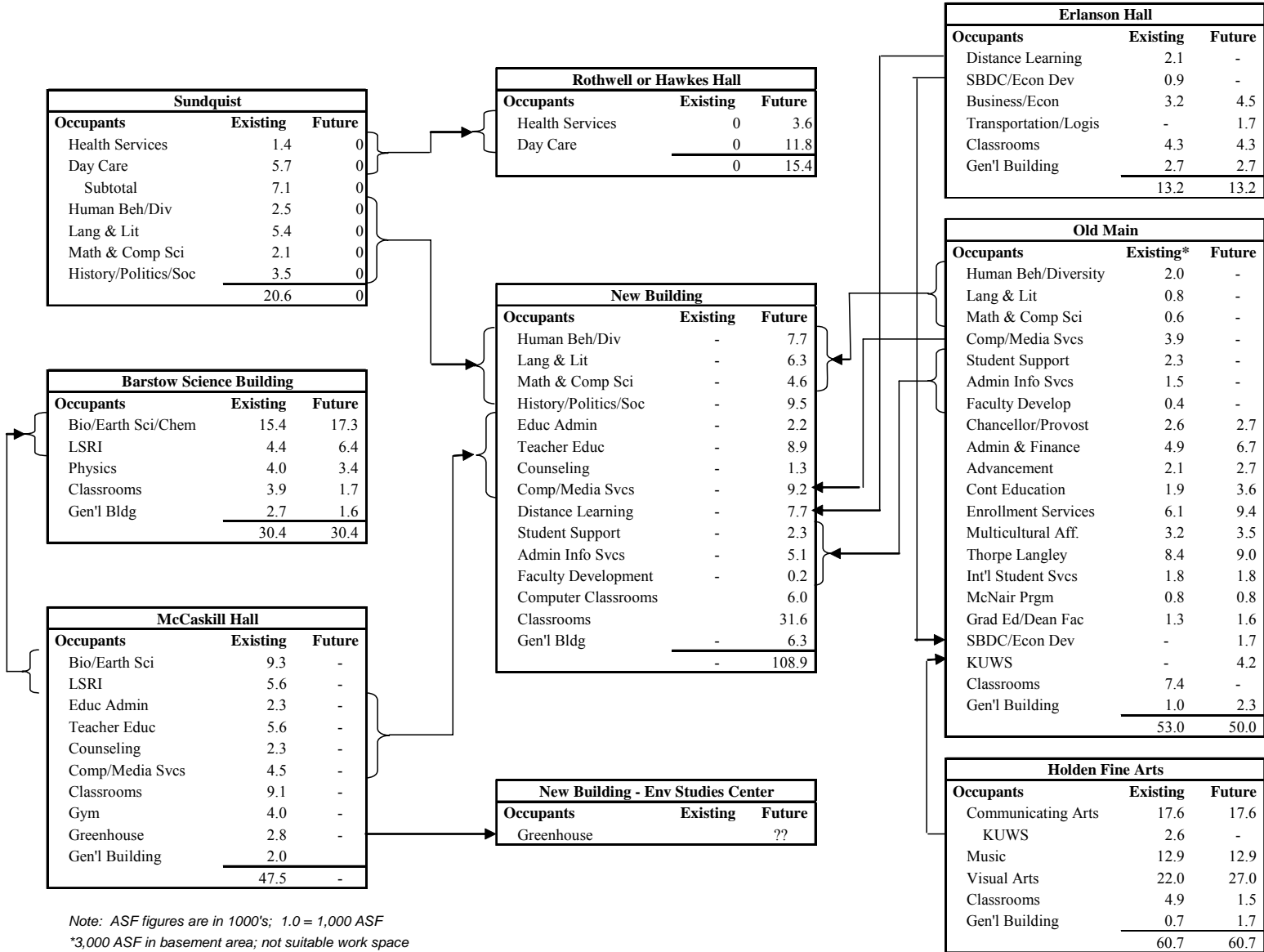
**Space Tabulation**

Ref No	Description	Required Space				Available			Surp (Def)	
		# of Occ	ASF/ Occ	ASF/ Rm	Rms Req'd	Req'd Space	Bldg Name	Rm #		Space
<b>Math &amp; Comp Sci</b>										
1	Dept Chair Office	1	135	135	1	135	Sundquist	333	174	39
2	Program Assist	1	70	70	1	70	Sundquist	306	173	103
3	Filing Area	1	90	90	1	90				(90)
4	Reception			0		100				(100)
5	Circulation			0		104				(104)
6	Faculty Offices	1	135	135	1	135	Sundquist	328	174	39
7	Faculty Offices	1	135	135	1	135	Sundquist	329	173	38
8	Faculty Offices	1	135	135	1	135	Sundquist	330	178	43
9	Faculty Offices	1	135	135	1	135	Sundquist	331	179	44
10	Faculty Offices	1	135	135	1	135	Sundquist	332	171	36
11	Faculty Offices	1	135	135	1	135	Sundquist	334	171	36
12	Faculty Offices	1	135	135	1	135	Sundquist	308	174	39
13	Growth Fac Off	1	135	135	1	135				(135)
14	Computer Lab	30	40	1,200	1	1,200	Old Main	132	610	(590)
15	Exper Comp Lab	10	40	400	1	400	Sundquist	310	349	(51)
16	Compr Arch Lab			400	1	400				(400)
17	Stud Study Space			300	1	300				(300)
18	Conference Rm Faculty Resource	15	25	375	1	375				(375)
19	Room	10	25	250	1	250	Sundquist	309	174	(76)
20	Storage			200	1	200				(200)
	Totals					4,704		2,700		(2,004)

► **Origin/Destination Chart**

A very useful tool to illustrate the reallocation of space and movement of departments between buildings is an origin/destination chart. This kind of chart can take many forms, but a most useful version is one that not only identifies departments but includes the associated amount of space both before and after reallocation.

This type of chart is useful to explain to all interested parties the comprehensiveness of a space use plan. It is a very compact illustration of who is where, who will be where, and the changes in space quantities. The example on the next page illustrates such a chart.



## **Program Revenue Facilities Planning**

### **General Process**

### **Residence Hall Planning**

### **Food Service Planning**

### **Student Center Planning**

### **Parking Planning**

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#### ► **General Process**

##### Purpose of this Program Revenue Facilities Planning Section

To define planning tools useful in evaluating and identifying future facility needs for program revenue funded operations.

##### Goals of the Program Revenue Physical Facilities Planning Process

To promote responsible stewardship of program revenue supported physical plant resources by maintaining comprehensive plans for the various program revenue operations. The plans provide a context for continual maintenance and development of program revenue supported facilities. Maintenance planning for program revenue facilities should follow the process described for all other facilities in this planning guide.

To promote coordinated planning between the general revenue supported facilities and program revenue supported facilities.

To develop facilities that deliver program revenue services in the most cost effective way while at the same time maintaining revenue streams necessary for long-term fiscal stability of those operations.

##### Participants and Roles

Program revenue facilities planning is an institution responsibility as part of comprehensive long range campus planning. Program revenue facilities that are supported by student room and board rates or segregated fees must involve students as part of the planning process. Frequently students must approve any use of segregated fees for projects. University System Administration Capital Planning and Budget staff are available to provide guidance and assistance, particularly regarding system-wide practices and guidelines.

#### ► **Residence Hall Planning**

##### Description of Residence Hall Long-Range Planning Process

The authors of this guide do not presume to be more knowledgeable in planning to meet residence hall needs than the residence life specialists at each institution. However, comprehensive campus planning must include provisions for residence facilities and is thus addressed in this guide. The quality of residence halls plays an important role in the culture of an institution. Properly designed residence halls can foster student academic and social

development, and can contribute to the vitality of student life and participation at an institution. Residence halls are often the place where students first meet other students, develop friendships, and become connected to an institution. Since room and board are a major component of the cost of a college education, it is important to provide housing in the most cost effective way possible while still responding to student needs. Appropriately designed housing will be responsive to institutional direction, accommodating current student needs, while providing flexibility to accommodate unanticipated future needs.

Increasingly, a variety of student housing types are desirable at an institution. The traditional two-person room with communal bathrooms, lounge spaces and full meal plan is often preferred for freshmen. Greater privacy and independence including the ability to do their own cooking, is usually preferred by students after their freshman year. While some host communities provide an adequate supply of affordable, conveniently located, reasonable quality private sector apartment housing, other communities do not. Some institutions may also find it desirable to encourage upper classmen to live on campus as a mentoring and stabilizing factor for all students in general.

Types of undergraduate student housing found system-wide include:

- Traditional dormitory buildings with double rooms and shared bathrooms
- Paired double rooms with a shared bathroom per pair
- Suites for 4-5 students with no cooking facilities
- Suites for 4-5 students with limited cooking facilities
- Apartments for 4-5 students with complete cooking facilities

Factors to consider when planning for residence halls include the following:

- Age and condition of existing facilities
- Existing and desired location(s) of residence halls
- Existing and desired capacity
- Existing and desired mix of student age groups
- Existing and desired mix of unit types
- Availability, cost, quality, and location of private sector housing
- Existing room rates, proposed room rates, and financial pro-forma
- Existing and desired participation in food plans
- Suitability and financial feasibility of conversion of existing housing stock to a different housing type

Where planning efforts involve evaluation of existing residence halls for major renovation, remodeling, or conversion to a different type of housing, System Administration Capital Planning and Budget and DSF staffs can assist institution staff in assessing those residence halls and choosing the most appropriate course of action. In some cases use of outside consultants may be required.

► **Food Service Planning**

Description of Food Service Long-Range Planning Process

The quality and convenience of food service can greatly affect the level of participation of all campus users of food service. Food service that provides convenience, high quality and a variety of choices can encourage greater use of food service by on-campus residents, commuter students, faculty and staff, and thus provide opportunities for social interaction. Given the consumer food choices available today, both board and retail dining users have higher expectations than was the case when most existing food service facilities were first built. Patterns of use have also changed so that longer hours of operation are necessary to respond to those patterns. Finally, the expansion of choices, the move to food preparation in front of the consumer, and the trend towards more pre-prepared groceries has meant that central food preparation facilities may be oversized for today's needs.

Since room and board are a major component of the cost of a college education, it is important that food service be provided in the most cost effective way possible while still responding to current student needs. Properly designed food service facilities, in addition to being responsive to current consumer expectations and institutional directions, will also provide flexibility to respond to future unanticipated needs and changes.

A significant stock of aging food service infrastructure and equipment, combined with changes in housing mix and the food service needs related to that mix point to a need for comprehensive review of food service facilities at many institutions. Since food service is so closely linked to housing and student unions, food service planning will usually need to occur in conjunction with planning for those facilities. In some cases, use of outside food service consultants may be required.

Factors to consider when planning for food service include the following

- Age and condition of existing facilities
- Location of food service in relation to existing and proposed residence halls
- Existing and desired location(s) of retail food operations
- Existing and desired seating and serving capacities for board and retail operations.
- Existing and desired venues for board and retail operations
- Existing and desired hours of operation
- Availability, cost, quality, and locations of off-campus food options
- Existing and desired level and type of board food plan participation
- Existing and desired number and location(s) of food preparation facilities
- Catering operations considerations
- Existing and desired food plan rates, retail prices, and financial pro-forma
- Suitability and financial feasibility of renovation and remodeling of existing food service facilities

## ► **Student Center Planning**

### Description of Student Center Planning Process

Student centers include both student union facilities and recreational facilities. Several institutions in the UW System have completed new student union projects, are in the process of implementing student union projects, or have completed planning studies. Since student unions are funded by segregated fees, student approval of fees to fund those projects is required. The institution may use whatever method is appropriate to obtain this approval, either through student governance, or by student referendum.

Several institutions also have other student funded facilities for athletic and other recreational or entertainment functions. These facilities should also be included in comprehensive campus development planning.

In planning student center projects that renovate, remodel, or expand existing facilities, a careful analysis should be done of the existing facility condition, and the suitability and financial feasibility of reuse of that facility for the proposed uses. System Administration Capital Planning and Budget and DSF staffs can assist the institution in assessing student centers and other facilities, and choosing the most appropriate course of action. In some cases, use of outside consultants may be required.

## ► **Parking Planning**

### Description of Parking Planning Process

The quantity and location of parking can have a major effect on the relationship between the institution and the host community. A long-term trend towards more residential students bringing cars to campus combined with a loss of parking to new construction projects, has resulted in increased pressure for parking. A shortage of on-campus parking can result in parking on streets in adjacent residential areas, limiting parking access for residents on those streets and resulting in increased traffic. In response to these problems some communities are instituting restrictions on street parking.

Since adequate land on or adjacent to campus may not be available to increase the amount of parking, planning efforts may need to include considerations of alternatives such as remote parking facilities, shuttles to those facilities, demand limiting methods, and parking structures. Demand limiting methods may range from rate strategies, incentives to use public transit, to limits on providing parking for on-campus residents.

Where land is available for purchase, planners should work closely with officials in the host communities to assure that zoning, environmental and neighborhood concerns are addressed. Any land to be acquired must have an environmental assessment that demonstrates that the land is free of environmental contamination before the land may be purchased. Where the land to be acquired lies outside existing campus boundaries, Board of Regents action will be required to extend boundaries. Land purchased for parking and improvements to that land must be funded with parking revenues.

Increased regulation of storm water will require planners to address management of storm water discharge from parking lots. Retention basins, infiltration areas, or other methods of limiting discharge may be required.

Since parking is a major land user, parking needs to be carefully coordinated with other elements of the long-range development plan and any master planning efforts that may occur. System Administration Capital Planning and Budget and DSF staffs can provide planning assistance in choosing the most appropriate course of action. In some cases, use of outside consultants may be required.

## **Maintenance Planning**

### **General Procedures**

#### **Issues Identification & Definition**

#### **Issues Filtering and Evaluation**

#### **Issues Resolution & Project Development**

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### ► **General Procedures**

#### Purpose of this Maintenance Planning Section

To define planning tools useful in evaluating and identifying future maintenance needs.

#### Goals of the Maintenance Planning Process

To promote responsible stewardship of physical plant resources by maintaining comprehensive capital maintenance plans for these resources. Maintenance plans provide a context for continual maintenance of campus facilities. Appropriate stewardship includes assuring that maintenance projects are requested and completed in a timely manner so failures of infrastructure and systems do not cause disruptions to operation of the institution.

To promote coordinated planning between the other components of the long-range development plan and maintenance projects.

#### Participants and Roles

Maintenance planning is an institution responsibility as part of comprehensive long range campus planning. University System Administration Capital Planning and Budget and DSF staff are available to provide guidance and technical assistance.

### ► **Issues Identification & Definition**

#### Description of the Issues Identification & Definition Process

Maintenance planning issues are identified through various methods and sources, the primary source being physical plant operations staff. Physical plant staff with their daily experiences and historic knowledge of campus infrastructure, can provide practical condition assessments and broad contextual information for analyzing information obtained from database management systems. Systems such as Capital Asset Management/Planning Information Systems, Computerized Maintenance Management Systems, Fleet Management Systems, Inventory Control Systems, and Key/Security Management Systems can provide unique insights into trends and past practices that may not be readily apparent through observation. Additionally the campus community provides unsolicited feedback on the condition of the physical plant, and also may be selectively interviewed for additional detail and understanding of the maintenance issues identified and the effect of those issues on program operations.

Maintenance planning issues identified through these means can be typically organized into logical groupings which may vary by institution depending on each institution's unique organization and circumstances. Organization of the issues within the general groupings will also vary depending on issue specificity and replication of the same or similar issues. Issues may be organized by building with the infrastructure systems noted below as subcategories. Or, if similar issues are found in multiple locations across a campus the issues may be organized by buildings within issues. The following is a typical list of common maintenance groupings.

Building Structure & Envelope: Includes elements and systems such as foundations, structure, exterior doors, exterior walls, exterior windows, roofing.

Building Interiors: Includes elements and systems such as interior ceilings, interior doors, interior floors/stairs, interior partitions (railings/balustrades, walls), interior signage, and interior windows.

Building Systems: Includes systems such as conveying systems (cranes/hoists, elevators/lifts), plumbing systems, fire protection systems, HVAC/ mechanical systems, electrical power and lighting systems, electronic security/alarm systems, and telecommunication systems (clocks/program, data, radio, public address, television, voice).

Central Utilities: Includes infrastructure such as central heating & chilling plants, site utilities such as chilled water, compressed air, domestic water, electrical, fuel, natural gas, sanitary sewer, steam, storm sewer, telecommunication.

Equipment & Furnishings: Includes fixed and special equipment such as athletic, food service, laundry, laboratory, library, loading dock, parking, recycling/waste, security, theatrical, and vehicle service equipment, and fixed furnishings such as casework, auditorium seating, and window treatments.

Site Improvements: Includes landscaping, pavements such as parking lots, pedestrian walkways, plazas, roadways, stairs, and site development such as athletic/recreational fields, fencing/railings, foot bridges, fountains, retaining walls, security telephones, signage, site lighting, and street furnishings/shelters.

Miscellaneous/Other: Includes issues not captured in the groupings above.

## ► Issues Filtering and Evaluation

### Description of the Issues Filtering and Evaluation Process

After issues (problems) have been organized in a logical manner, an initial filtering occurs to screen out issues that:

- 1) do not require resolution for a variety of reasons,
- 2) have solutions defined that are not yet implemented, or
- 3) are in the process of being resolved.

The Campus Physical Development Plan plays a significant role in this process since it provides the comprehensive context for all decisions regarding planned changes to the physical plant. Subjecting the issues to filters 1, 2 and 3 separates the issues into manageable groups and reduces the maintenance issues list requiring further evaluation. The following narrative and diagram conceptually describe the process. **A suggested method of accomplishing the objectives is offered in the "Long Range Maintenance Planning Documentation Format" in the appendix.**

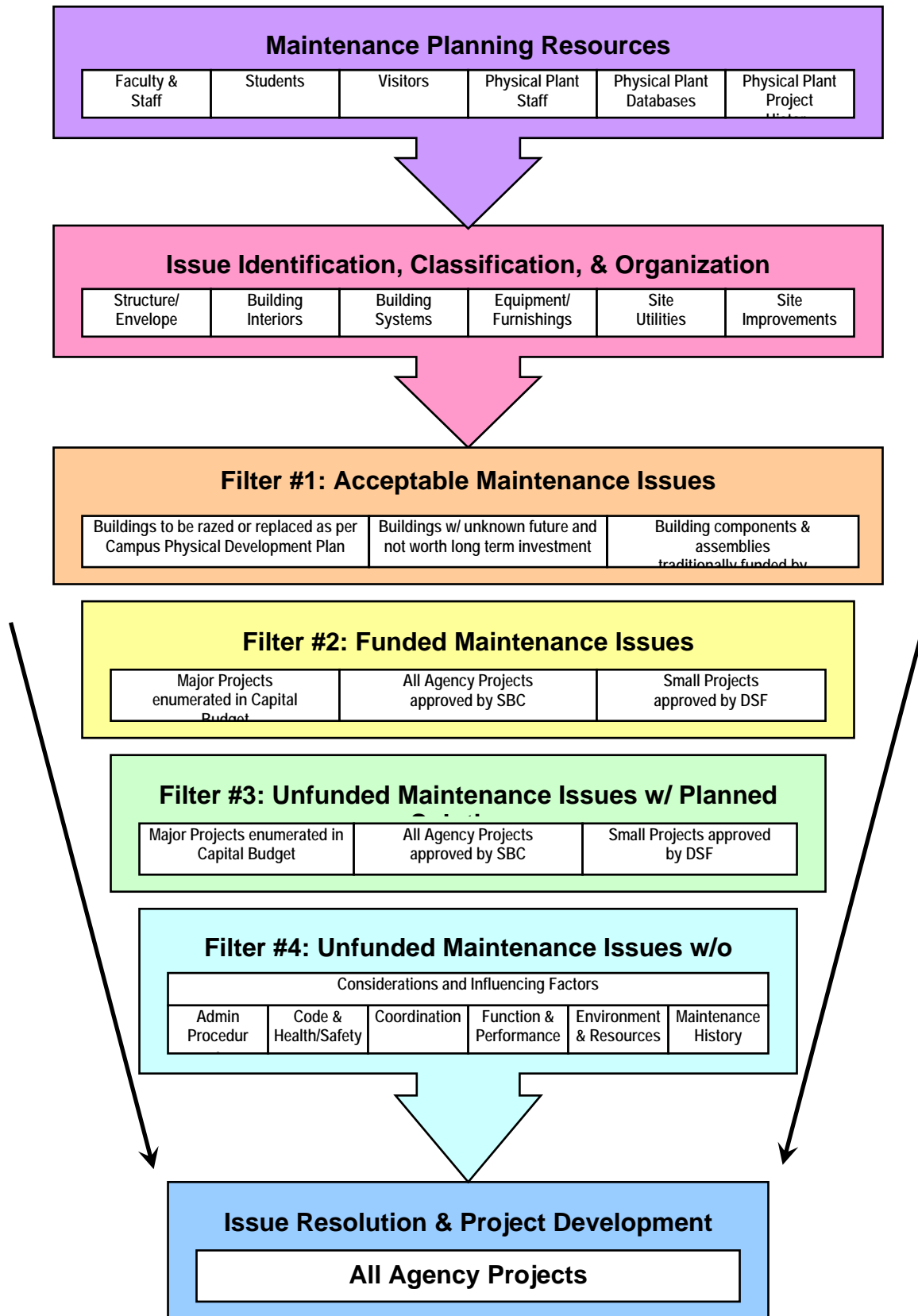
Filter #1: Acceptable Maintenance Issues: This filter removes those issues the institution is willing to accept at the present time. Factors influencing this filter include buildings scheduled for demolition, buildings not worth long-term maintenance investment, maintenance items traditionally funded by operational funds, or items that can most-efficiently be addressed when failure occurs. Each issue will require re-evaluation during each subsequent planning cycle in relation to those factors and to other planning efforts.

Filter #2: Funded Maintenance Issues: This filter removes those issues for which funding to resolve the issue has been secured, but until the projects are completed are still considered current maintenance issues. Examples of funded projects include but are not limited to: major projects (enumerated), All-Agency projects approved by the Building Commission, small projects approved by DSF.

Filter #3: Unfunded Maintenance Issues **with** Planned Project Solutions: This filter removes those issues that will be addressed as part of planned major projects identified in the Campus Physical Development Plan, or have been requested for implementation but have not yet been funded as all agency or small projects in the current biennium.

Filter #4: Unfunded Maintenance Issues **without** Planned Project Solutions: This filter removes those issues not requiring immediate (next biennium) resolution. Although it is anticipated these issues will require resolution in the near future (6-10 year horizon), attempting to predict exactly how and when these issues will be resolved is unnecessary and impractical. This filter reduces the issues list to those issues that will require attention in the next funding cycle. During the next biennium the issues list remaining after Filter #4 will be the unsolved maintenance issues that can be further researched with UW System staff to jointly develop appropriate project solutions and timelines.

# Long Range Maintenance Planning Process & Documentation



After the maintenance issues list has been reduced to those without identified solutions, the remaining issues must be evaluated to determine which issues require immediate attention, near future attention, or are anticipated to require attention in the longer term. There are numerous influencing factors and considerations affecting evaluation of issues through Filter #4. Some factors to be considered are identified below. While some of these factors are objective, others involve judgment. Accordingly, in a given planning cycle, some factors may be weighted more heavily than others, and in subsequent planning cycles this weighting may change. These factors can be grouped into general themes, including but not limited to the following.

Administrative Procedures

Procedural limitations of each institution influence decisions regarding who, what, when, where, how, and why issues receive attention. In many cases these limitations vary by institution and directly influence the scale and philosophy for developing project solutions.

<u>Administrative Procedures</u>	<u>Objective</u>	<u>Subjective</u>
<u>Factors</u>	<u>Considerations</u>	<u>Considerations</u>
Political	Limits	Alternatives
Procedural	Limits	Alternatives

Code, Health/Safety, and Environmental

Code, Health/Safety, and Environmental factors are regulatory influences on institution operations. Failing to address issues in this category may result in legal and monetary penalties. Are there conditions that pose health or safety hazards? Are there code or other regulatory violations? Have there been citations? Are there risk management concerns?

<u>Code, Health/Safety,</u>	<u>Objective</u>	<u>Subjective</u>
<u>Environmental Factors</u>	<u>Considerations</u>	<u>Considerations</u>
Building Codes	Citations/Fines	Compliance
Code/Statute Updates	Mandatory	Advisory
Health, Safety, & Environment	Incidents/Reports	Impact (concerns/hazards)
Insurance/RISK Management	Claims/Incidents	Assessments/Reports

Coordination

Coordination factors are operational realities each institution faces when planning and implementing projects. There is a delicate balance between keeping the infrastructure and operations synchronized, and minimizing the interruptions to both when maintenance and improvement projects are implemented. Are there consequences for delaying action? Does addressing this issue need to coordinate with other issues? Are there sequencing concerns that require this issue to be

resolved before other issues can be addressed? Must there be coordination to avoid disruption of operations or revenue loss? Must there be coordination with the academic calendar? Are there timing concerns related to staffing or other institutional resources?

<u>Coordination Factors</u>	<u>Objective Considerations</u>	<u>Subjective Considerations</u>
Institutional Calendar	Scheduled Events	Scheduling Alternatives
Project Delay	Expense	Impact on Operations
Project Economy (combined work)	Expense	Efficiency
Project Schedule	Construction Duration	Construction Window
Project Sequence	Under Construction	Planned
Seasonal Calendar	Seasonal Work	Scheduling Alternatives
Temporary Accommodation/Relocation	Spaces Available	Acceptable Alternatives

### Functionality & Performance

Factors relating to the quality of the physical plant and environmental aspects of an institution focus on how something functions and/or performs in relation to current needs. While a facility or infrastructure component may be usable or functioning, it may not be meeting the needs; e.g., a room may be too small or an air handler may be undersized. How is the element or system performing? Is it performing as designed? Is it meeting present needs? Is capacity sufficient? Is it technologically obsolete? Is there redundancy or back-up available? How will failure affect other elements or components?

<u>Functionality &amp; Performance Factors</u>	<u>Objective Considerations</u>	<u>Subjective Considerations</u>
Circulation/Traffic	Adjacency	Wayfinding
Circulation/Traffic	Volume	Patterns
Facility/Equipment/System Capacity	Current Demand	Future Demand
Facility/Equipment/System Intent	Operability	Functionality/Performance
Facility/Equipment/System Redundancy	Yes/No	Necessity
Security System	Breeches/Incidents	Effectiveness
Space Type	Availability	Quality
Space Use	Function	Flexibility
Type of Facility	Occupants/Programs	Public/Semi-Private/Private
Type of Facility	Construction Type	Construction Alternatives

## Institution Environment

Each institution serves a multitude of constituents, each perceiving the institution differently, depending on the degree and frequency of interaction each has with the institution. There are many factors influencing constituent perceptions of the institution's unique character, mission, operation, and vision. How will resolution of this issue affect institutional operations and mission? Is there strategic importance in resolving this issue? How many programs, students, faculty and staff will be affected? Are there aesthetic or historical implications? Are there host community implications? How are other long-range development plans affected? Are there implications on staffing or other institutional resources?

<u>Institution Environment Factors</u>	<u>Objective Considerations</u>	<u>Subjective Considerations</u>
Action vs. No Action	Expense	Consequences
Aesthetic Impact	Yes/No	Effectiveness/Importance
Assessable Improvements	Yes/No	Alternatives
Campus Mission/Initiative Impact	Yes/No	Effectiveness/Importance
Community Outreach Impact	Yes/No	Effectiveness/Importance
Historical Impact	Yes/No	Effectiveness/Importance
Physical Plant Impact	Percent in Construction	Intensity of Construction
Projects Approved	Yes/No	Relationship to
Projects Defined	Yes/No	Relationship to
Real Estate Transaction	Developed/Undeveloped	Appropriate for Intent
Regional Development	Adjacency/Proximity	Consequences

## Institution Resources

The quantity, quality and reliability of institution resources directly affect its ability to effectively plan and manage maintenance issues. Limited resources, for example staffing, affects maintenance planning, project identification, and project implementation. Will there be operational cost savings by resolving this issue?

Will there be energy savings? Will there be increased costs if resolution of this issue is delayed? Are there revenue implications? Are there cost efficiencies that can occur by combining resolution of this issue with other issues?

<u>Institution Resources Factors</u>	<u>Objective Considerations</u>	<u>Subjective Considerations</u>
Campus Physical Development Plan	Yes/No	Quality
Capital Funding	Limits	Alternatives
Data/Drawings/Records	Yes/No	Quality/Reliability
Institutional History/Memory	Yes/No	Quality
Operational Funding	Limits	Alternatives
Staff Availability	Yes/No	Expertise

### Maintenance History

Planning issues may be very general or specific to an infrastructure component. In either case, ultimately the history of individual assemblies or pieces of equipment must be evaluated. Maintenance history factors relate to an item's operability, maintainability, and remaining useful life. Evaluating the status of an item's operability, maintainability, and remaining useful life directly influences the item's condition assessment. Condition assessment evaluations along with an analysis of repair vs. replacement cost alternatives, determines the most appropriate economical and efficient resolution of the issue. What is the observed condition of the element or system? Is it still operational? Has it failed or is failure imminent? How old is the element or system? Is it past its useful life? How frequently is maintenance required? What is the history of repairs and break-downs? Are repair parts available?

<u>Maintenance History Factors</u>	<u>Objective Considerations</u>	<u>Subjective Considerations</u>
Energy Consumption	Expense	Efficiency
Facility/System/Equipment Maintainability	Life Expectancy	Life Remaining
Facility/System/Equipment Maintainability	Part Availability	Obsolescence
Facility/System/Equipment Operability	Age	Condition
Facility/System/Equipment Status	Present	Future
Failure/Breakdown	Incidents	Consequences
Maintenance Backlog	Estimated Level	Acceptable Level
Operational Maintenance	Expense	Efficiency
Repair vs. Replacement Cost	Economy	Efficiency
Repair vs. Replacement Cost	FCI Rating	Life Cycle Costing
Technology	Incompatibility	Obsolescence
Trouble Calls	Frequency	Severity

## ► **Issue Resolution & Project Development**

Maintenance planning is a continual and incremental process of identifying, sorting and evaluating issues, evaluating alternatives, and developing project solutions. Each planning cycle re-evaluates the known issues and the appropriateness of identified solutions within the comprehensive institutional context. Each planning cycle extracts a select set of issues requiring immediate attention, and defines solutions to resolve the issues. Appropriate project solutions are based on the applicable influencing factors and considerations. The evaluative process is repeated until the resulting and cumulative project solutions reaches funding, timing/sequential, or other limitations. With limited funding to resolve maintenance issues, it is imperative the most critical maintenance issues are addressed in a timely fashion.

Biennial capital improvement projects are typically the method for resolving maintenance issues. Projects can be part of a major project, an All-Agency project, or a small project. Solutions must include clear project scopes and budget estimates. At a minimum, once each biennium this process should result in a prioritized list of all-agency funded projects and individual All-Agency Project Requests. Since the maintenance conditions are continually evaluated throughout each biennium, it is understood that project definitions, budgets, and priorities may require periodic modification to ensure that the most critical maintenance issues are addressed in a timely fashion.

## Consultant Services for Planning

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There are occasions when institution and system staff need the assistance of a planning consultant to help facilitate some type of specialized planning because special expertise is required or additional human resources are needed to complete a special planning initiative.

When it becomes necessary to hire a consultant, the **procedures for employing consultants for planning are described in the "Project Implementation Process and Tools" section of this guide.** Consultants can be employed to assist in planning for SPECIAL STUDIES, GENERAL PLANNING SERVICES or OTHER SPECIAL PURPOSES.

## **Sustainable Design**

### **Introduction**

### **Planning Considerations**

### **Project Implementation**

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#### ► **Introduction**

Elements of environmentally responsible design have been a part of planning for UW capital projects for some time. Energy efficiency, indoor air quality, effective storm water management, and mitigating the effects of development for neighbors of the university are examples of considerations that have been a part of the implementation of capital projects. Nationally, a renewed interest in environmentally responsible design has been manifested in a desire to build facilities that are variously known as "green," "sustainable," or "high-performance."

Sustainable design practices are encouraged in the development of University of Wisconsin capital projects. The current *Campus Physical Development Principles*, adopted by the Board of Regents in September 2001 include sustainability as a consideration in physical planning:

"Sustainability should be an element of all physical planning. Sustainability is defined as the ability to meet our needs today without compromising the ability of future generations to meet their needs. Planning efforts should maximize desirable features of the natural environment, minimize damage to that environment and minimize depletion of resources in the construction and operation of facilities."

In addition, the State of Wisconsin encourages incorporation of sustainable design practices in the development of capital projects.

#### ► **Planning Considerations**

Sustainability should be a consideration early in the planning process and early in the life of a capital improvement project. Sustainability should be considered in every phase of planning from master planning through building and exterior space planning. For instance, if there is a desire to incorporate sustainable building features as part of the learning experience of users of the building, or to make sustainability an important design goal, those goals should be included in all planning documents as well as in specific project requirements. Similarly, if a project is to be implemented using LEED or another standard, that should be incorporated in the project requirements. Doing this allows any cost considerations to be addressed, and assures that the appropriate consulting expertise is obtained for design of the project.

There are a variety of benchmarks for measuring sustainable design. The best-known benchmark is the LEED (Leadership in Energy and Environmental Design) rating system published by the U.S. Green Building Council, but there are other standards as well, such as the *Minnesota Sustainability Guidelines*. The LEED rating system has been widely promoted, and many consultants are familiar with its application. In addition, the U.S.

Green Building Council offers the opportunity for projects to be certified at various levels of sustainable design by using the LEED rating system.

Although the LEED rating system can be a useful tool for measuring sustainability, some requirements of the rating system may result in less energy-efficient projects than can be achieved with use of state building code requirements and DSF standards. In addition, the rating system is not equally adaptable to all building types. Therefore, depending on the project, it may be preferable to use the LEED rating system as a guide to making decisions on what sustainable practices to incorporate into the project, but not seek actual project certification. Before seeking certification for a project, an analysis should be made of the appropriateness of certification for the project in question.

Obtaining LEED certification can be a costly process, often running into several hundred thousand dollars to cover additional consultant services and certification fees. Therefore, if LEED certification is desired, the project budget should include the necessary costs. In addition, although many sustainable design features can be accomplished within normal construction budgets, more sophisticated sustainable design features may increase construction costs. Therefore, careful consideration should be given during planning to what sustainability features are likely to be included in a project and to develop the construction budget accordingly.

► **Project Implementation**

Although sustainable design encompasses a broad range of issues from transportation to water use to energy efficiency to indoor environment, the implementation of UW capital projects should emphasize three areas of sustainability: energy efficiency, maintainability, and long-term flexibility/ adaptability.

Buildings should be designed to optimize energy efficiency. In addition to reducing ongoing operating costs, energy-efficient buildings reduce the need for capital projects that increase steam, chilled water, and electrical infrastructure capacity. Energy efficient design not only includes use of high-efficiency HVAC and lighting systems, but also involves appropriate building orientation and efficient exterior envelope design. Appropriate amounts of glazing and proper orientation to maximize daylighting while minimizing energy loads should be a part of an efficient exterior envelope. Energy efficiency also includes designing buildings for efficient operation. Obtaining optimal operational efficiency will require that systems can be easily maintained to operate at design levels, and that portions of buildings can be operated at set-back levels during periods of low or no occupancy.

Maintenance should be a concern of sustainable design. Facilities should be able to be operated without requiring undue staffing, including exterior space design such as parking lots and landscaping. Building components that require too-frequent replacement can contribute to an increase in the waste stream, and an increase in the use of resources required to manufacture replacement components. Similarly, components that require frequent preventive maintenance should be avoided. For example, use of steel or wood on the exterior of buildings imposes a maintenance requirement that, if not met, can lead to

premature failure. Systems that depend on extensive operator intervention or preventative maintenance for efficient operation should also be avoided. For example, sensors requiring frequent calibration may result in compromised operations if not maintained. Therefore, building components and systems normally should be designed for long usable lives and ease of operation. An exception would be the use of components that have a useable life that is longer than the expected functional life. For example, it may not be wise to use a resource-intensive material such as concrete masonry for interior partitions, when gypsum drywall partitions will function adequately for areas that may be remodeled in the future, and are less resource-intensive to change.

Buildings should also be designed to be easily cleanable with normal operations. Materials that are difficult to clean, design features that accumulate dirt or dust, or areas that are difficult to access but require cleaning should be avoided, since accumulation of dust and dirt can result in poor indoor air quality. Similarly, components of HVAC systems that require replacement or cleaning, such as filters or coils, should be readily accessible.

Buildings should be designed to allow for long-term flexibility and adaptability to change. Since buildings encompass a significant amount of embodied energy, a sustainable design should allow this embodied energy to be useful for as long a period of time as possible. Buildings that quickly become functionally obsolete not only waste this embodied energy, but contribute to the waste stream, and require new resources and energy to replace. Buildings with design features such as adequate floor-to-floor heights, generous and regular structural bays, adequate utility infrastructure, and easily reconfigurable interior partitions can better accommodate future change than buildings without those features. Similarly, designs that are more generic and regular in layout offer more future flexibility without remodeling than designs that are highly customized to today's uses.

When using a tool such as the LEED rating system to measure sustainability, care should be taken that incorporation of sustainable features not be driven by the tool, but that decisions be made on the basis of all relevant information, including energy impact, maintenance impact, and long-term flexibility. Other information that may help in arriving at decisions include life-cycle-costing and energy modeling.

# **University of Wisconsin System Campus Physical Planning Principles September 2001**

## **Introduction**

The purpose of this document is to define the basic principles for planning the physical development and maintenance of the University of Wisconsin System campuses. The Board of Regents expects each institution to apply these principles in capital planning. It is important that, before engaging in the planning or design of new buildings, major renovations, campus exterior developments, or other changes in the physical makeup of a campus, that these principles be effectively communicated to all people involved in planning. Planners, faculty, staff, students, and consulting architects and engineers should be challenged to demonstrate how their plans and designs accomplish the goals of these principles. As design continues, plans should be continually reevaluated by appropriate levels within the institution and System Administration to ensure the goals of these principles are accomplished to the maximum extent possible.

The buildings and other physical facilities that comprise a campus play a vital role in carrying out the missions of the UW System and its institutions. While the people of the State of Wisconsin spend large sums of money supporting year-by-year operating costs for instruction, research, and public service, the investment in the physical plant is also substantial. The quality of the physical facilities contributes immeasurably to the offering of quality educational and research programs and the overall image of the universities. Planning succeeds when those who use the campus and those who participate in its creation learn to appreciate its value, understand its power to enhance the educational process and human life, and become active advocates for excellence in the built environment.

Sound physical planning must take into account long-range program directions and the facilities needed to support those directions. Good planning means thinking beyond what may be newly required; it means planning the wise stewardship of existing physical facilities. This stewardship role involves making the best possible use of existing facilities, seeking capital funding for major maintenance and renovation, and maintaining adequate operating budgets to ensure appropriate on-going routine and preventive maintenance. Judicious planning will result in cost-effective measures to assure the highest and best use of available resources.

Sustainability should be an element of all physical planning. Sustainability is defined as the ability to meet our needs today without compromising the ability of future generations to meet their needs. Planning efforts should maximize desirable features of the natural environment, minimize damage to that environment and minimize depletion of resources in the construction and operation of facilities.

These planning principles are intended to guide the UW System campuses in a continuing evaluation of the facilities needed to support university programs. The planning and implementation process for projects often spans a number of years, and planning decisions made in one year must consider the physical accommodation of university programs several years beyond that time frame. Accordingly, these planning principles are set forth in the context of projected university missions and programs.

### **Principles for Campus Physical Planning**

These principles will be applied during the planning process to provide direction for physical planning decisions, and to help insure the resultant plans include necessary considerations.

1. To plan physical development within the context of planning guidelines specific to each institution.

Each university must formally maintain and apply policies and guidelines that are responsive to these planning principles, unique to the university, and provide a framework for campus improvements. Each University has a distinctive "character" reflecting the unique programs and environment relating to its location and history. Campus development plans should capitalize on available programs and themes, enhance them, and introduce complementing themes that together establish a feeling of harmony while reflecting the multi-disciplinary nature of the campus with its surroundings. Guidelines should address both facility interiors and exteriors. Materials and finishes, lighting, pedestrian, bicycle and vehicular circulation, landscaping, open spaces and activity areas, all add distinctive character and integrity to a campus. All capital maintenance and improvements planned and implemented at each university must be within the framework provided by these principles and the guidelines unique to the university.

2. To create a physical environment that contributes aesthetically and physically to the overall educational experience.

Physical facilities are an integral part of the educational experience and, by their makeup and appearance, must enhance the quality of the university and its programs and the areas around the campus while strengthening the identity of the university.

The physical appearance, character and integrity of a campus stand as indelible statements of the nature and values of the institution, the community, and of those who work at and visit the campus. The physical attributes can add a rich dimension to the experience each person derives from association with a university. Students and employees appreciate the value of pleasant, useful surroundings that promote successful endeavors upon which a university thrives. Campus open spaces should create a strong positive identity and project a sense of place that reinforces a

people-oriented environment, encouraging social interaction and educational discourse. Interior environments should be people-oriented, should enhance formal and informal social interaction and should provide connections to the exterior environment through daylight and views. The total development should enrich all those who experience the working and learning environment of a campus.

3. To plan facilities on the basis of student enrollment and other population levels and distributions which may reasonably be projected.

Enrollments are being managed through Regent enrollment planning. The physical environment must be correlated to proper populations of students, faculty, staff and other members of the university community. This concept is relevant to all interior and exterior developments.

4. To plan facilities that are responsive to programs and the way they are delivered.

Modern methods of teaching and learning require various types of spaces. Planning must go beyond traditional thinking in terms of classrooms, laboratories, libraries, etc. to create a contemporary environment that will enable students to succeed. For example: research is increasingly conducted collaboratively by faculty and undergraduate students; students need space to work together in small groups both in the classroom or lab and in other campus facilities; the roles of the student union and library are evolving to encourage more interaction between students and faculty; etc. A variety of contemporary technologies are available to support these efforts. Planners must be aware of these trends and tools and integrate them into campus plans. Changing programs and methods of teaching and research, and the expansion of knowledge will continue to generate changing facility needs. New programs will continue to be added; others may be discontinued. As some programs increase in size, others will decline. Facilities planning must include a vision for the future and incorporate flexibility and adaptability in the design and use of facilities to the greatest extent possible to address ever-changing programmatic needs.

5. To recognize the increasingly diverse student population, and to provide for the needs of these students.

Awareness should be heightened to understand and address the needs of diverse student populations. Among these are students of various age groups, ethnicity, and special needs. The number of non-traditional students is increasing as individuals, businesses, and communities recognize changing needs in the work place, communities, and personal lives. These students are typically from outside the traditional eighteen to early twenty year-old population and include both younger and older age groups. There is a growing focus on higher and continuing education, and lifelong learning. Efforts to increase multi-cultural student enrollments and accommodate students with special needs should be accompanied by providing appropriate environments. Learning tools and methods for delivering

instruction are evolving to meet the educational needs of all students, and new and innovative technologies are being utilized to support varying methods of instructional delivery. Distance learning capabilities, housing, day care, and other special facilities which improve access to university programs, must be considered as part of the contribution facilities will make toward enabling quality programs to be delivered to the greatest number of people and providing special amenities to promote student success for all.

6. To maintain an ongoing comprehensive building space management function and a comprehensive space use plan specific to the university.

Each university must formally maintain and apply policies and guidelines that provide a framework for managing building space. The ongoing space management program of each university must consider foreseeable program changes, maximizing effective and efficient use of existing space. Building space is a major university resource making it essential to manage all existing building space, to continually assess whether changes are needed to more effectively meet program needs. Reviewing alternatives such as the reassignment of spaces, changes in scheduling, remodeling to enable more effective sizing of classes must be a continuing effort to meet program needs, maximize the efficient utilization of space, and minimize the impact on the operating budget. Proposals for new construction must demonstrate all feasible alternatives for the use of existing space have been thoroughly explored. An effective space management function is essential to managing university space and preparing comprehensive justification for capital expenditures.

7. To make optimal use of all existing UW System facilities through renovation, conversion, and remodeling wherever possible.

It is recognized that optimal use may require substantial dollar investments to upgrade and remodel and, where appropriate, convert existing facilities to new uses.

When considering facility requirements, universities should first examine the potential use of available existing space as an alternative to new construction. Given the heavy investment in physical plant, the UW System must continually pursue modernization, modification, renovation, and remodeling of these facilities in order to protect that investment, and to extend the useful life to the maximum. Because of changing program needs and the requirements of modern teaching and research practices, a number of the older facilities will require functional changes and updating to properly accommodate programs whose character has changed.

8. To protect the large investments already made by students and the state in the physical plant and equipment.

With a significant investment in facilities located throughout the state, it is clear the UW System must protect, maintain and enhance the investments for future generations. Four areas of focus relate to this principle:

- a. Health and Safety - To assure that proper consideration is given to the health and safety of all who use university facilities.

Correction of health and safety code violations cited by either state or federal regulatory agencies must be given priority consideration. The state's moral obligation to provide a safe environment may result in corrective actions, whether or not a violation exists.

Facilities should be planned with the use of systems and materials that will maintain a healthy and safe environment throughout the life of those facilities.

- b. Maintenance - To properly maintain all existing facilities, promoting maximum usefulness for program objectives, and to extend the useful life of facilities as long as economically feasible.

High priority must be given to repair work on facility structural systems, the exterior building envelope, building systems (such as mechanical, electrical and plumbing) utility services, telecommunications and other support systems necessary for a building to function.

- c. Accessibility - To develop an overall environment that is accessible to people with disabilities and to remove existing barriers that obstruct access to university buildings and facilities.

Institutions must evaluate facilities to determine if they adequately accommodate persons with physical disabilities. Providing a barrier-free environment must be an inherent part of the planning process.

- d. Resource Conservation - To achieve maximum efficiency in the consumption of resources.

Planning must include efforts to minimize electrical energy and heating fuel consumption. All facilities should be evaluated for energy efficiencies, and construction projects should be initiated to promote energy savings. Alternative energy sources should be explored to reduce energy consumption, while maintaining an adequate environment for the conduct of instruction, research and related programs. Facilities should be planned to accommodate the use of sustainable and recycled materials and to encourage recycling.

9. To encourage collaboration, partnerships and innovation in planning.

Collaborative partnerships can foster economic revitalization, cultural enrichment and community service. Physical planning should explore joint public-private ventures, multi-use facilities, interdisciplinary functions, and other collaborative innovations. Such options should be promoted to heighten public awareness, lead to funding opportunities, and to develop vital and sustaining partnerships. Jointly planned facilities should respond to missions and programs, improve community relations, promote the university's image, and take advantage of economies of scale. Collaborative use of federal, state and local grant funding programs should be encouraged to leverage state dollars for facilities development.

10. To ensure facility development is compatible with the existing positive features of campus and neighborhood environs through joint university/community planning, addressing economic and environmental impact.

All University of Wisconsin campuses are located within a municipality, frequently adjacent to residential areas. The large size of university facilities and numbers of people using them greatly affect the areas surrounding the campuses and the lives of many people. All campus development should be considerate of the natural environment and the architectural integrity of its surroundings and should compliment and enhance existing positive features. A broad array of environmental concerns including clean air and water, aesthetics, traffic, parking and economics should be considered. Early involvement of the municipalities and the community is encouraged. Cooperative, compatible, sustainable development is an essential goal of campus planning, and the university has a responsibility to provide leadership to achieve this goal.

11. To include students in the planning process whenever feasible, but always in the case of planning for student fee-supported projects

State law and Regent policy require participation of students and users where appropriate in the formulation of plan elements supported by such fees. Self-amortizing projects may include residence halls, dining facilities, vehicular parking areas, student centers and unions, childcare facilities and, in some instances, recreational or athletic facilities. Regent policy seeks to assure student participation in planning decisions affecting segregated fees.

12. To provide for the transportation system needs of the university community.

Attention must be given to pedestrian, bicycle, and motorized vehicular circulation to ensure that university needs are met within context of the transportation systems of the surrounding community. Appropriate signage and wayfinding systems should be encouraged. Vehicular circulation should be accommodated gracefully, respecting and not dominating the pedestrian-oriented campus. Parking design should be responsive to the distinctive elements of each campus master plan.

Parking should be encouraged at the perimeter of the campus, and multi-modal transportation systems (walking, biking, riding buses/trains, etc.) should be encouraged to reduce the dependence on the automobile thus enhancing the central pedestrian core.

13. To plan development at the UW Colleges in concert with the county and/or city in which the UW College is located.

State law provides that the construction cost of buildings at UW Colleges be financed by the counties and/or cities in which the campus is located. Local governments own the facilities that are leased to and operated by the UW System. The law enables the State Building Commission to authorize state funding for required special and movable equipment. While facility construction and renovation decisions are the prerogative of the respective local municipal bodies, the UW Colleges are responsible for effective space management and long-range facilities planning. The Board of Regents must be made aware of the operating budget implications and equipment needs as a result of College/Municipal planning. All facility improvements should respond to the mission of the UW Colleges.

14. To join in Wisconsin's commitment to the recognition of the state's heritage through historic preservation of buildings and other facilities.

The university supports compliance with the policies adopted by the State Building Commission related to Sections 44.40, Wis. Stats., stating that each state agency shall consider the effects of proposed actions on historic properties. The State Building Commission has adopted explicit policies and procedures governing the planning and consideration of projects in order to preserve buildings and other facilities of historic value. The essence of these policies must be considered when making building program decisions.