



## 7. SUSTAINABILITY & PERFORMANCE STANDARDS



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Global challenges - notably climate change, resource scarcity, and urbanization threaten the stability of life in metropolitan regions. For the first time in history, the majority of the world's population lives in cities, and these urban regions anticipate even greater growth. This population and resource concentration means that cities, and the institutions that comprise them, will increasingly be held accountable in addressing these challenges, compelling the exploration and adoption of urban sustainability practices and solutions. In light of these concerns, the following considerations have been integrated into this framework plan as a means to ensure expansion and growth with the lowest adverse impact possible on the environment and local ecosystems.

# Sustainability

OHSU holds a vision for operations and expansion of its facilities portfolio in a manner that comprehensively balances the needs of the institution with protection of the environment and judicious use of natural resources. The Oregon Sustainability Act of 2006, Executive Order No. 06-02— Sustainability for the 21st Century, among other instruments, has shaped the establishment of policies, goals, and guidelines for OHSU facilities in the coming decades.

As the institution seeks to consolidate its operations and expand strategically onto the Schnitzer Campus, coordinated and consistent efforts will be made to make the highest and best use of existing facility assets while upgrading and expanding its holdings. The facilities master plan creates a framework around the somewhat opportunistic nature of expansion to help determine how these opportunities can be most beneficially realized. Within this context, scenario options for capitalizing on each opportunity need to be carefully evaluated on a comparable basis. Additionally, broader partnering and shared infrastructure opportunities – many of them already under study – should be considered to leverage the investment.

## CAMPUS LEVEL OPPORTUNITIES

### Make Efficient Use of Existing Assets in Fulfilling the Vision of the Facilities Master Plan.

Decisions regarding relocation of departments and expansion or renovation of existing facilities should be approached first with a view to the highest and best use of the existing facilities, including their renovation and expansion potential. New facility



Water drains outside of BRB on OHSU Campus

construction should be considered after realistic scenarios for reuse of existing buildings have been considered.

### Investigate Sharing and Integration of Infrastructure Costs and Benefits with Partner Organizations.

The potential advantages of district-scale utility systems, as distinct from smaller-scale building-level and larger municipal-scale systems should be evaluated whenever possible. District-scale systems can offer both financial and resource-efficiency perspective opportunities not found in conventional systems. Partnering with private sector partners to achieve financing, ownership and operation, or a more balance demand profile should be examined as each opportunity arises. For example: the designation of the South Waterfront as an Eco-district by

the City of Portland holds potential for municipal support of shared systems on the South Waterfront Central Campus and the Schnitzer Campus. The distribution of residential occupancies with the institutional facilities on Marquam Hill suggests a favorable demand profile for district energy generation. Practical implications of such partnerships, such as their impact on entitlements and land use, will be considered carefully.

#### **Create Responsible, Flexible, and Enduring New Buildings.**

New buildings should be planned with adequate space and utilization rates to meet institutional growth projections. New buildings will also be designed for flexible, reconfigurable uses to the greatest extent feasible while maintaining budget and code compliance constraints. New and renovated facilities will be designed, constructed, and commissioned to the highest standards for environmentally responsive buildings, including usage of systems to reduce ventilation rate requirements without compromise to contamination or infection control; use of cascading recovery, harvesting and resource reuse strategies; and state-of-the-art low energy and low water use design. Additionally, buildings will be designed with consideration for potential future additions, changes in use, and connection to district or shared utility infrastructure. Finally buildings will be constructed using best practices with respect to construction waste and site impact minimization.

#### **Operate Buildings in a Comprehensive, Responsible, and Accountable Manner.**

In addition to the current Facilities Cost Index maintained by OHSU, building operations will be reviewed for best practices. Tenant Improvement and other building-scale interventions will provide an opportunity to review and possibly, re-commission the facility for improved operation.

#### **Locate Support Services Within Close Proximity to OHSU's Marquam Hill and Schnitzer Campuses**

Over time, many OHSU support services have been relocated off of the Marquam Hill Campus to scattered owned and leased sites in downtown Portland and beyond. While moving back office and non-mission delivery programs and staff to less central locations frees up space on campus, the trend has created other inefficiencies and deleterious impacts. Employees often drive back and forth between their office and the Marquam Hill Campus to attend meetings and provide services. The increase in driving between these sites is a contributor to OHSU's growing carbon footprint. This master plan has identified the South Waterfront Central District near the lower Tram station as the ideal location to centralize support services. The location is in close proximity to both the Marquam Hill and Schnitzer Campuses which will be critical to serve all of OHSU as programs are relocated off of the hill. Further, the location leverages OHSU's significant investments in both the Tram and the Portland Streetcar line that serves South Waterfront and will allow employees to avoid driving between these sites.

# Policies and Practices

## Energy Generation and Distribution

Stand-alone generation of building heating and cooling will be used on campus only in cases where centralized supply is not practical due either to limitations in capacity or distribution. Planning for the expansion and upgrade of generation and distribution infrastructure will continue and will be implemented as opportunities arise (see Strategic Energy Financing below).

Current plans include a replacement boiler plant on the site of the existing facility. The replacement plant will be designed to enable modular expansion of capacity and efficient, staged operation. Chiller plant capacity, in particular for the southern portion of the campus, will be augmented with a strategic plant addition. Distribution systems will be upgraded for capacity and performance with each phase of improvement. Chiller and boiler plants will be serviced at regular intervals throughout their service life.

## Strategic Energy Financing

Means and methods for financing energy improvements on the OHSU campuses are currently under study. Third party ownership and financing, both of building efficiency improvements and systems infrastructure, is being investigated in the form of Energy Service Company (ESCO) agreements and strategic plans with other interested parties.

## District Energy Possibilities

The Portland Development Commission and OHSU commissioned a detailed study on the potential for district energy systems in the city-designated South Waterfront Eco-district. Third-party financing and other innovative mechanisms to capitalize, own, and operate the systems are under continued study. OHSU will remain party to the discussions as a potential participant in a district energy system either on the Schnitzer and Marquam Hill campuses.

## Water Use and Management

OHSU published its *Comprehensive Stormwater Management Plan* in 2007. The study is the result of a Memorandum of Understanding between the institution and the City of Portland signed in 2004 to minimize and mitigate the impacts of storm water on municipal management systems in light of anticipated institutional development. The document follows closely the policies established in the 2005 *Portland Watershed Management Plan*. It describes a total of thirty storm water mitigation projects on the Marquam Hill Campus. Of these, twenty could be implemented without requiring professional design and engineering. These projects should be integrated into the implantation of the Facilities Master Plan. Additionally, a Storm Water Facilities Operations and Maintenance Policy should be developed to ensure sustained performance of these features.

Practices for the conservation of potable water have enabled considerable expansion of facilities with a concurrent reduction in overall potable water usage. Low-flow plumbing fixtures, automated flow control systems, and responsible design of water-consuming facility support systems will continue to improve the efficient use and conservation of potable water as the institution expands.

One notable exception to the general conservation-based approach to water systems on campus is the compressor cooling system, currently using municipally-supplied water. OHSU will create a plan to replace this water supply and implement it as part of the upcoming capital improvement plan.

### **Landscape**

Local native ecosystems are threatened by invasive plant species on and near the Marquam Hill Campus. Control and management of these species will provide improved safe access for emergency vehicles, reduced catastrophic fire danger, improved aesthetics and begun restoration of the native forest on Marquam Hill.

Implementation of the *OHSU Invasive Plants Management Plan* was initiated in conjunction with students from Portland State University in 2010. The plan is intended to create a prioritized strategy to reduce risk from invasive plants before they cause greater harm. Specifically, the plan outlines steps to manage the issues in increments of time, with a projected level of required

investment to achieve each step. OHSU has committed to completing and implementing the plan.

### **Solid Waste**

Waste management plans at OHSU are the subject of ongoing review. Implementation of the LEED certification system has assisted in improving recycling rates on a building-by-building basis.

OHSU will continue to investigate new technologies for on-site waste disposal and waste-to-energy (such as carbon-arc technologies) for implementation on the campus.

### **Transportation**

The mode split at OHSU, particularly on the Marquam Hill campus, remains biased toward Single Occupancy Vehicles (SOV), which is unfavorable from and environmental as well as from a traffic and parking aspects. In order to encourage alternate transportation, OHSU will create a plan for one or more bicycle centers, including showers, changing, and bike storage facilities, on its Marquam Hill campus. The plan will be included as a part of the overall capital improvements plan.

## Building Performance & Certification Standards

All new construction, tenant improvement, and renovation projects at OHSU shall comply with the following criteria:



### **SALMON SAFE**

<http://www.salmonsafe.org/>

Action: Plan and budget for the construction of a refueling area cover as a part of the scope of a near-term capital project. Achieve the SalmonSafe certification by December 31, 2015.



### **LABS21 Environmental Performance Criteria (EPC)**

<http://www.epa.gov/lab21gov/toolkit/epc.htm>

Requirement: A minimum of LEED-NC Gold under the EPC system for research new constructions with the goal of achieving Platinum.



### **LEED for New Construction (NC)**

<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=220>

Requirement: A minimum of LEED-NC Gold for non-patient-cares new construction with the goal of achieving Platinum.

### **LEED for Healthcare**

<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1765>

Requirement: A minimum of LEED-HEALTHCARE Gold for patient-care new construction with a goal of achieving Platinum.

### **LEED for Commercial Interiors (CI)**

<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=145>

Requirement: Goal of LEED-CI Gold for all TI projects where the project scope includes a complete gut and remodel of the space and the size of the area exceeds 10,000 square feet.

### **LEED Existing Buildings Operations & Maintenance (EBOM)**

<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=221>

Requirement: Implement a policy to achieve LEED EBOM Gold certification for all OHSU-owned facilities by December 31, 2014.

### **LEED 2010 Application Guide for Multiple Buildings and On-Campus Building Projects**

<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=2326>

Requirement: Create management and leadership to implement a campus-wide repository of LEED and sustainability performance certification information and meeting data.

### **UPDATED STANDARDS**

The virtue of referring to website standards cited above is that they will be constantly updated. While the principles and policies outlined earlier in this chapter will endure, technical standards are subject to constant change and revision.

