



4. PROGRAM ASSESSMENT & RECOMMENDATION

4. PROGRAM ASSESSMENT & RECOMMENDATIONS

To better anticipate the space and facility needs of OHSU programs over the next 20 years, the Facilities Master Plan project team evaluated program deficiencies, growth projections, demographics and policies within the following four categories: Hospitals & Clinics, Research, Academic and Central Services. Of particular importance is how growth is planned within the four distinct campus areas (West Campus, Marquam Hill Campus, South Waterfront's Central District, and Schnitzer Campus) to support interdisciplinary collaboration and strategic partnerships. As programs shift and growth occurs there will be significant consideration of functional adjacencies. New space will be designed for enhanced flexibility. Space policy will continue to guide and improve space utilization and efficiency. Departments will continue to balance the need for mission-critical space and support space.

The following chapter is a summary of the information gathered from OHSU departments and programs.

Interview Process and Summary

INTERVIEW PROCESS

Representatives of OHSU departments were selected by Steering Committee leadership to be engaged in the program assessment for this master plan. The project team distributed questionnaires which were completed by the department and, in many cases, discussed in follow-up interviews. Overall, the project team conducted 33 interviews with 107 OHSU representative consisting of physicians, administrators, faculty, researchers and staff from a variety of departments to discuss existing program deficiencies and future space and programming needs. The purpose of the questionnaires and interviews was not to create a comprehensive list of facility needs, but to capture broad themes and give the project team some insight into the goals of individual departments as they relate to the long-term vision for the campus.

The following program or focus groups were included in this process.

Hospital & Clinics

- Ambulatory Projections
- Doernbecher Children's Hospital
- Graduate Medical Education
- Hospital Administration
- Hospital Administration Support
- Nursing
- Oncology
- Professional Services
- Support Services
- Surgery

Academics & Research

- Academic Affairs
- Advanced Imaging
- Area Health Education Center (AHEC)
- Basic Sciences
- Cardiovascular Medicine
- Center for Research for Occupational & Environmental Toxicology
- Clinical & Translational Research Center (CTRC)

- Comparative Medicine
- Education Communication
- Knight Cancer Institute
- Library
- Molecular Microbiology & Immunology
- Office of Rural Health
- Oregon National Primate Research Center (ONPRC)
- Radiation Therapy
- School of Dentistry
- School of Nursing
- School of Pharmacy
- Student Health Services
- Vollum Institute

School of Medicine

- Behavioral Neuroscience
- Biochemistry & Molecular Biology
- Casey Eye Institute
- Dermatology
- Emergency Medicine
- Family Medicine

- Heart Research Center
- Laboratory Services
- Molecular & Medical Genetics
- Neurology
- Orthopedics
- Pediatrics
- Pediatric Otolaryngology
- Physical Assistance Education
- Psychiatry
- Surgery: Abdominal Organ Transplant
- Surgery: Surgical Oncology
- Surgery: Trauma, Critical Care & Acute Care

Central Services

- Facilities: Transportation & Parking
- Facilities: Public Safety
- Facilities: Logistics
- Facilities: Design & Construction
- Facilities: Operations & Maintenance
- Information Technology Group (ITG)
- Central Financial Services

See Appendix for a summary of comments by group.

Existing Building Uses Map

OHSU's Marquam Hill Campus was, in the Marquam Hill Plan of 2003, shown zoned into three functional areas of Hospital, Research and Academic uses. Primary uses of each building on the Marquam Hill Campus are shown on the following map.



Hospital



Academic & Research



Mixed-Use



Building Uses

- hospital
- academic & research
- mixed-use
- other
- parking structure



Hospitals and Clinics

PROGRAM FINDINGS

In general, growth in the number of inpatient beds correlates with growth in other patient care departments. Consistently high bed occupancy rates at OHSU indicate a need to increase inpatient bed capacity. However, as the industry trends towards targeted therapies and less invasive procedures, it can be anticipated that the duration of recovery time will decrease and the rate of inpatient bed growth may not be as high as the demand increases seen in the past decade or longer. For the same reasons, ambulatory growth may increase as a significant proportion of inpatient bed growth.

Hospital Administration will further develop the ambulatory business model and evaluate the correlation between inpatient bed and ambulatory increases, and determine whether the ambulatory growth strategy is centralized, decentralized or both. Partnership opportunities with other local or regional healthcare providers may also contribute to growth in some areas.

Nonetheless, inpatient bed, ambulatory care as well as ancillary and support departments are expected to grow in the next 20 years. Depending on the rate of inpatient and ambulatory growth, there may be sufficient demand to develop a new inpatient Hospital Tower. An outpatient Cancer Center and a Cardiovascular Center of Emphasis may also become necessary, in which research and medicine would overlap, advancing bench to bedside care.

Patient care focus groups also identified a number of current deficiencies that will influence future development.



OHSU Doernbecher

Capacity – The hospital’s occupancy rate is projected to exceed 85% in FY ‘11 and to hit 90% by FY ‘15 despite the addition of 30-40 new inpatient beds in the intervening years.

Private vs. Semi-private Rooms – Although there is a clear preference for private rooms, many South Hospital (OHS) rooms are still semi-private rooms. Private rooms are also becoming a higher priority in the Neonatal Intensive Care Unit (NICU).

Outdated Clinical Space – Patient care space in Sam Jackson Hall and Multnomah Pavilion are deemed inadequate due to the age and location of the buildings. Patient care is being phased out of these buildings.



OHSU BRB Conference Room

Support Space – Lack of storage is a significant problem noted by all clinical departments and nursing staff. Nursing floors and Clinical Laboratories report insufficient support space. There is also a campus-wide shortage of conference and meeting rooms.

Functional Adjacencies – Currently there is poor functional

adjacency between departments and their support services. In many cases, the hospital support services departments are too far removed from their constituents to function efficiently. Departments including surgery and imaging are decentralized, which reduces efficiency, although demands are approaching full operating capacity.

Parking – Patient Care departments have stated a desire for improved parking availability and options, which they view as inadequate for staff as well as for patients and families.

Wayfinding – Comprehensive, campus-wide signage and wayfinding improvements are needed to improve patient and visitor experience. The lack of direct access between parking facilities and patient care areas is a significant concern.

Lodging Accommodations – Other hospitals have successfully developed lodging accommodation for patients and visitors within close proximity to their hospitals. Not only is it seen as an amenity, but in some cases, it can shorten hospital stays for patients who live outside the area and are well enough to be discharged from the hospital, but perhaps not well enough to travel several hours home. Lodging could be provided in partnership with a developer or other entity.

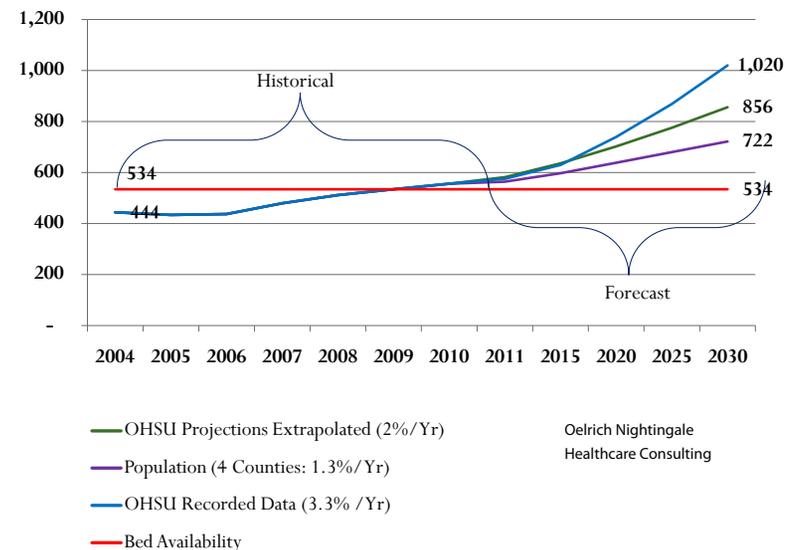
GROWTH PROJECTIONS

As noted above, OHSU's ability to increase its capacity for patient care is strongly tied to inpatient bed count. Any increase in the number of hospital inpatients will directly affect the size and capacity of other departments such as surgery and imaging, as well as support departments such as materials management and environmental services. The facilities master plan design team worked with hospital operations consultant Teri Oelrich to develop an inpatient bed growth forecast for OHSU.

Forecasts for this report were based on three sets of data. (1) Population increase forecasts in a four county area (2010-2030 for Clackamas, Washington, Multnomah, and Clark Counties), (2) OHSU bed count forecasts for 2010-2015 extrapolated to 2030, and (3) OHSU historical data (2004-2010) extrapolated forward to 2030. A goal occupancy rate of 80% was assumed for all forecasts. This methodology was used to "bracket" potential bed needs for OHSU periodically through the year 2030.

The current bed capacity at OHSU is 534. Using these three forecasting techniques, year 2030 bed count forecasts ranged from 722 beds (four county populations trends) to 1,020 beds (growth based on OHSU historical data). The conclusion of the report was that the forecast of 856 beds by 2030 (using current

OHSU projections extrapolated forward) was the most reasonable forecast. This conclusion was reached because (1) growth above population projections allows for continued increase in service program options, outreach, new and expanded partnerships, (2) historically, OHSU volume has grown faster than four county population growth, and (3) given the current state of uncertainty over national healthcare, the historical growth rate of 3.3% annually may be difficult to maintain.



PROGRAMMATIC RECOMMENDATIONS

The following 16 recommendations were identified to address programmatic and facility deficiencies. These recommendations were derived from all of the interviews and the feedback from the Patient Care Steering Committee.

1. Add 150 inpatient beds over the next 5 years.
2. Plan for a new patient tower to be built in the second decade of the plan.
3. Integrate all pediatric and mother/baby services in one location.
4. Address space and functional deficiencies of the existing NICU and convert most rooms to privates.
5. Relocate the clinical lab out of Dillehunt Hall into a new and larger facility.
6. Relocate the surgery short-stay unit out of Multnomah Pavilion into a new facility.
7. Add new or backfill existing space for expanded ancillary and support services when adding inpatient bed capacity. Top priorities include respiratory therapy, infection control, bed and patient transport storage, food and nutrition services.
8. Convert semi private inpatient rooms to all private rooms when a new patient tower is built.
9. Relocate the inpatient psychiatric unit from Multnomah Pavilion to OHS when a new patient tower is built.
10. Work with the OHSU and Doernbecher Foundations and Ronald McDonald House Charities to fund the construction of a new and larger Ronald McDonald House on the site of the current house.
11. Look for private partner to build a lodging facility in South Waterfront adjacent to the tram, preferably on non-OHSU land.
12. Complete a strategic business plan for ambulatory services and clinics in order to guide facility planning.
13. Preserve the hillside immediately west of Dornbecher Children's Hospital for DCH expansion.
14. Preserve both the KPV North and School of Dentistry sites for future hospital expansion.
15. Preserve Block 29 in the South Waterfront Central District (i.e. the block south of CHH) for future ambulatory expansion.
16. Adhere to the ideal inpatient nursing unit size of 32 beds to achieve optimum nursing and staffing efficiencies

Academics

PROGRAM FINDINGS

OHSU grants the state's only doctoral degrees in medicine, nursing, dentistry, and health-focused engineering. Doctoral degrees in pharmacy are also granted, in partnership with Oregon State University. In addition, OHSU provides many specialized research programs unique to the region and educates master's-level, undergraduate and certificate students in a broad spectrum of health and information sciences.

Overall, Academic enrollment increased 36% in the past decade and programs are expected to continue to grow. In fact, some departments indicate that a lack of available teaching space is preventing current program growth. Program growth can be attributed to a significant shortage of physicians in Oregon and beyond. Another factor influencing academic growth is the correlation that exists between Academics and Patient Care within a medical teaching institution. In this environment, medical practitioners also function as researchers and faculty. Therefore, Academic and Research growth must be correlated, to some degree, to growth in Patient Care.

The School of Medicine consists of 1,750 faculty, 1,200 students, 750 residents and fellows. The School is organized in 27 departments and 17 centers, offering doctorates in medicine and philosophy; masters in science, public health and physician assistant studies; and combined degrees. The School of Medicine's enrollment doubled in the past decade.



OHSU students

The School of Nursing enrollment grew 39% in the past decade; in 2009 it had 710 undergraduate and 219 graduate students for a total of 929. Faculty and staff totaled 334.

The School of Dentistry runs five graduate programs with 47 residents, some of whom practice general dentistry and others practice in hospital settings. In 2009, 299 students were enrolled in the DMD program and 35 in the dental graduate program; faculty and staff totaled 338. The School is undertaking several new initiatives and anticipating others: a simulation lab, electronic health records, digital imaging, cone beam 3-D imaging, community based education, and practice networks.

Oregon State University's School of Pharmacy will expand its joint program with OHSU when they begin to offer a Doctor of Pharmacy degree with the opening of the OHSU/OUS Collaborative Life Sciences Building. The first two years will be taught in Corvallis, the third at OHSU followed by one year in practice. Third year enrollment totaled 94 students in 2008.

Relocation of academic facilities to the Schnitzer Campus presents an opportunity to create teaching spaces that will support the team-based, interdisciplinary approaches to care and learning that are being adopted throughout OHSU. It is anticipated that changing technology will continue to influence both learning and teaching styles. This will affect space, communication, collaboration, distance learning and simulation labs, contributing to faster delivery of education. OHSU must prepare for future models of learning and training.

A number of issues relating to OHSU academics as a whole emerged from discussions with faculty and staff within the School of Medicine, Dentistry, Nursing and Pharmacy.

Accessibility – Campus wide there is a need for greater accessibility. Some spaces have been upgraded to meet ADA requirements, but universal access has yet to be achieved elsewhere.

Functional Adjacencies – An overall problem for the School of Medicine is the dispersal of department faculty in multiple locations and the consequent lack of collegial interaction. The ideal would be to bring the departments together in one building.

Faculty Offices & Staff Space – There is a shortage of faculty office space and too few office cubicles for support staff.

Library – There is inadequate space to accommodate growing archives and collections. There is a strong desire to stay in close proximity to both the schools and the hospital. It is not yet clear how schools moving to the Schnitzer Campus will be served.

Learning Spaces – Multiple departments requested additional, higher quality, and more appropriately sized learning spaces.

Emerging Models – New models for learning, based on technology advancements and new demographics demonstrate new ways of learning and training such as distance learning and simulation. This translates into flexible and technically equipped learning spaces.

Interdisciplinary Learning – The concept of team based medicine is growing, emphasizing the importance of interdisciplinary collaboration between patient care, education, and research. This complicates decisions on location of joint use facilities and may introduce new learning modes. Better coordinated teaching schedules will also be required.

Collaboration Spaces - In addition to greater collaboration between departments and schools with clinical functions, there is a need for more conference rooms, informal meeting spaces and common spaces adjacent to shared functions and open space.

Student Activity – Informal student interaction spaces, including recreational spaces, are an important part of student health and well being. This type of space should have close proximity to other student learning spaces.

Technology & Distance Learning – Continuing changes in technology can be expected to influence future learning styles and the spaces needed to accommodate them. Use of distance learning may become more widespread, prompting a need for short-stay housing for students during periodic on-campus sessions. The “virtual campus” is a trend in medical and nursing schools where learning is increasingly done on line rather than in a classroom, but with periodic on-campus sessions.

Housing – With the trend in medical & nursing schools towards remote learning in a ‘virtual campus,’ short stay housing is becoming necessary for visiting students. This regime includes two-week “intensives” which bring students to stay in Portland twice a year. This trend is being driven by the market and is expected to grow in the next 2 years to an estimated 175 students at any one time within the School of Nursing. Typically there would be 20-25 students at any one time. Such housing could also be used for visiting professors.

Parking – Many focus groups report that there are insufficient parking options on Marquam Hill.



OHSU BRB Interaction Space

PROGRAMMATIC RECOMMENDATIONS

The Academic and Research Steering Committee endorsed the 2007 Schnitzer Campus Vision and the 2008 Schnitzer Campus Master Plan which calls for the phased relocation of academic functions and facilities from the Marquam Hill Campus to a new, interdisciplinary education and research campus on riverfront land donated to OHSU by the Schnitzer Family. The implementation of this vision is expected to take 20 to 30 years. The following recommendations flow from that strategic direction.

1. Relocate the first two years of the MD program, the first two years of dentistry, the joint OSU/OHSU pharmacy program, and the new Center for Spatial Systems Biomedicine to the OHSU/OUS Collaborative Life Sciences Building.
2. The remaining elements of the School of Dentistry that are not included in the Collaborative Building should comprise the central program of a Schnitzer Campus Building two that will be built concurrent with or immediately after the Collaborative Building.
3. Once building two is completed, plan for one new building to be built every five years until the Schnitzer Campus is fully built-out.
4. All new Schnitzer Campus buildings should be designed to encourage collaboration and interdisciplinary training, and both formal and informal student gathering spaces.
5. If PSU and OHSU jointly form a new School of Public Health it should ultimately be located on the Schnitzer Campus.
6. Most student and academic affairs programs and staff should relocate to the Schnitzer Campus when building number three or four is built. At that time a critical mass of student activity will be occurring on the Schnitzer Campus to justify the relocation of these services.
7. Student Health should be ultimately relocated to CHH or a new ambulatory building adjacent to CHH so the clinic is near lab and pharmacy services while also being centrally located to serve students on the Schnitzer Campus and graduate and doctoral students who remain on Marquam Hill.
8. Library services will remain in the BICC and the Auditorium Building, but a satellite library facility should be incorporated into the Schnitzer Campus program.
9. If OHSU and a private partner build a lodging facility adjacent to the Tram in the South Waterfront Central District, incorporate the needs of visiting students and the demand for conference space into the program.
10. Relocate the remaining Biomedical Engineering units located on the West Campus to Marquam Hill or South Waterfront before the OGI lease expires at the end of 2013. The Center for Spoken Language Understanding would ideally be located in the CHH 12 space vacated by the pharmacy program.
11. Backfill vacated academic space on Marquam Hill with School of Medicine department and faculty offices. Where possible, attempt to centralize departments in contiguous space where they are now dispersed throughout campus.

Research

PROGRAM FINDINGS

The overall movement within the institution toward a more collaborative, interdisciplinary, service-lines-based mode of operation presents the largest issue for the distribution of research spaces on the campus. Adjacency and overlap with clinical care and with teaching forums should be planned to promote interaction and collaboration. Certain large additions to the institution, such as a Clinical Trials program or Cancer Institute, will present clear and obvious opportunities for promoting an overlap of research with other activities. In other cases, the opportunistic nature of research facility expansion may bypass consideration of collocations that would foster collaboration.



OHSU Vollum Flexible Lab Space

Flexible Lab Space – There is a desire for more flexible lab space by some departments. Vollum is a good model for this and allows for flexibility over time.

Specialized Labs – There is a request for specialized facilities – BSL3 labs, AbSL3, imaging technologies, and Phase 1 research inpatient unit.

Functional Adjacencies – Some spaces are underutilized due to their locations being too remote from the programs that they support; some departments would like to be more centralized.

Office Space – There is a need for more offices amongst some departments, or better adjacencies between those that have adequate space.

Molecular & Microbiology – Open laboratories are not suitable for microbiology; existing space is not appropriate. BSL-2 and BSL-3 laboratory standards are needed.

Basic Sciences – There is a need for BSL-3 facility and Phase 1 Facility

Comparative Medicine – There is a lack of support research space that requires BSL-3 quality and procedural space. There is also a need for adjacent imaging space to support a variety of imaging modalities: MRI, NMR, Ultrasound, bioluminescent and radiology. Animal space must be sufficient, flexible and easy to maintain.

Knight Cancer Institute – The Knight Cancer Institute has been designated as the University’s first Center of Emphasis. As such, the Institute is expected to grow its three major initiatives: Lab Services, Tissue Bank and Discovery Engine. There is a desire to get research and clinic space as close as possible with a “bench to bedside” strategy for translational research and commercialization. Planned Knight recruits will drive research space needs in the near to mid-term.

Quality of lab space – Existing lab spaces must be maintained and upgraded over time so that the overall quality of lab space is more consistent between buildings, regardless of their age.

PROGRAMMATIC RECOMMENDATIONS

The following recommendations were derived from the interviews, feedback from the Academic and Research Steering Committee and meetings with the VP for Research.

1. Core research facilities and support should be limited to the Marquam Hill Campus, the new Schnitzer Campus and the ONPRC. While research space exists in CHH, the intent is to avoid the significant facility investments and operating costs to support a fourth research center in the Central District.
2. In addition to the OCSSB space in the Collaborative Life Sciences Building, the proposed Schnitzer Campus Building Two should include up to 40,000 ASF of new research space to accommodate near-term growth and new recruits.
3. Plan for a new research building for the Knight Cancer Institute as Schnitzer Campus Building Three. The building program will need to include research support facilities and may also include research space for other Centers, Institutes and Departments.
4. If the Knight Cancer Institute is consolidated on the Schnitzer Campus in Building Three, their existing space should be backfilled to accommodate programmatic growth of the next designated Center of Emphasis.
5. If Sam Jackson and Dillehunt Halls are demolished during the life of this plan, the site should be preserved for a future research building connected to the Biomedical Research Building.
6. Plan for the expansion of Building One on the West Campus to accommodate VGTI and ONPRC growth.

Central Services

Central Service groups provide the necessary support to allow the primary Hospital and University mission areas to operate. Their functions include maintaining and upgrading building infrastructure, including mechanical systems and data technology; monitoring building energy usage; overseeing new projects and renovations; managing real estate; maintaining the grounds; tracking assets and delivery of goods; overseeing parking and public safety; executing contracts; managing employees and payroll; and maintain the institution's budget.

Central Service departments include the following:

- Affirmative Action and Equal Opportunity
- Campus Planning, Development & Real Estate
- Central Financial Services
- Contracting Services
- Diversity
- Education Communications
- Facilities & Real Estate
- OHSU Foundation (affiliated)
- Human Resources
- Information Technology Group
- Integrity Office
- Legal
- Library

- Logistics
- Risk Management
- Web Strategies

As the campus grows, a clear strategy is required to serve West Campus, Marquam Hill, Central South Waterfront, and Schnitzer Campuses adequately. As the campus grows off Marquam Hill, a combination of centralized and distributed functions will be required to minimize the number of vehicular trips.

Building a new Support Service building was conceived several years ago to consolidate Central Service functions. The plan was not executed due to financial constraints combined with the challenge of quantifying the return on investment for a development whose occupants are not revenue generating. All central service leases have been amended so they are synchronized to terminate on or near the same date, June 30, 2017 in order to allow for centralization of these functions either in a new OHSU building or a new leased site.

The Logistics department is significantly challenged by current loading dock facility constraints. Central receiving at Dock 4 accommodates receipt and delivery of 95% of all packages delivered to OHSU. Another issue is the location of the Macadam Warehouse next to the streetcar tracks in the Central South Waterfront district. Frequent large truck traffic within an

increasingly urban context and the new one-way street grid is becoming a major constraint to operations. A more suburban warehouse location could be evaluated as an alternate if the current site sold with OHSU investing the funds in the new facility (this would require an exemption from the State surplus land guidelines). With approximately 150 full time employees dispersed throughout OHSU, the department will require special consideration as OHSU grows.

Similarly, the transportation and management of construction materials by OHSU hired general contractors and their subcontractors for both University and Hospital projects, presents an ongoing challenge. Design & Construction needs to provide their contractors both indoor and outdoor staging areas to support their projects.

There will also continue to be a space need for onsite office space for administrative consultants, auditors, vendors, and contractors. Adequate space and facilities for Central Service departments can enhance the efficiency of their operations, affecting the institution's bottom line.

PROGRAMMATIC RECOMMENDATIONS

1. Plan for a new parking garage on the site of the parking lot behind the Auditorium Building (Lot 83). The garage should be built to maximize the allowed parking under the zone that covers the north end of campus which is approximately 475 new spaces.
2. Plan for a new logistics dock to replace Dock 4 in a central location on the Marquam Hill Campus.
3. Undertake a solicitation in mid-2013 for proposals to accommodate all of OHSU's central service programs that are in leased space and the OHSU Foundation and UMG Billing. Potential outcomes could be a privately financed, built and owned Support Service Building on OHSU land or the centralization of central services in an existing leased building in downtown Portland or South Waterfront.
4. Relocate ITG's back-up data center out of the Bronson Creek Building to the ONPRC before the OGI lease expires at the end of 2013.

