Oregon TECH
Oregon Institute of Technology

Facilities Master Plan

December 2023

Klamath Falls Campus and Portland-Metro Campus

Developed by:
Soderstrom Architects

1331 NW Lovejoy Street, Suite 775 | Portland, OR 97209 | **sdra.com**

Acknowledgements - Facilities Master Plan Team

Oregon Tech Leadership provided guidance and direction through regular meetings and discussions:

Dr. Nagi Naganathan, *University President*
John Harman, *Vice President for Finance and Administration*
Thom Darrah, *Director, Facilities Management Services and Capital Planning*
Michelle Meyer, *Director of Audit and Compliance*

Oregon Tech 2022 – 2023 Facilities Planning Committee (FPC) provided feedback through regular scheduled presentations and reviews of draft Facilities Master Plan progress:

John Harman, Committee Chair, *Vice President for Finance and Administration*
Dr. Joanna Mott, *Provost and Vice President Academic Affairs and Strategic Enrollment Management*
Dr. Erin Foley, *Vice President for Student Affairs and Dean of Students*
Dr. Abdy Afjeh, *Vice Provost for Research and Academic Affairs*
Tony Richey, *Chief Technology Officer, Information Technology Services*
Dr. Tom Keyser, *Dean, College of Engineering, Technology and Management*
Dr. Dan Peterson, *Dean, College of Health, Arts and Sciences*
Josephine Ness, *Director of Admissions*
John Van Dyke, *Director of Athletics*
Thom Darrah, *Director, Facilities Management Services and Capital Planning*
Dr. John Schoppert, *University Librarian*
Wendy Ivie, *University Registrar*
Dr. Lara Pracht, *Director of Academic Affairs, Portland-Metro Representative*
Dr. Ashton Greer, *Faculty Senate, Faculty Representative*
Dr. Ken Davis, *Applied Mathematics, Faculty Representative 1*
Gary Lomprey, *Business Management, Faculty Representative 2*
Sharon Beaudry, *Business Management, Faculty Representative 3*
Finn Anders, *Klamath Falls Campus Student Representative*
William Sell, *Portland-Metro Campus Student Representative*

Individual discussions of up to an hour each were held with key individuals across all divisions and campus locations:

President's Office
Dr. Nagi Naganathan, *University President*

Academic Affairs
Dr. Joanna Mott, *Provost and Vice President Academic Affairs and Strategic Enrollment Management*
Dr. Abdy Afjeh, *Vice Provost for Research and Academic Affairs*
Dr. Tom Keyser, *Dean, College of Engineering, Technology and Management*
Dr. Dan Peterson, *Dean, College of Health, Arts and Sciences*
Dr. Dawn Bailey, *Director of the Applied Behavior Analysis Clinic (ABA Clinic)*
Sharon Beaudry, *Commission on College Teaching*
Paula Russell, *Department Chair, Dental Hygiene*
Gary Lomprey, *Professor of Management*
Dr. Arief Budiman, *Director of the Oregon Renewable Energy Center (OREC)*
Dr. Lara Pracht, *Director of Academic Affairs*
Sara Mansfield, *Campus Operations Manager*
Josephine Ness, *Director of Admissions*
Jason Tucker, *Instrument Technologist, College of Health, Arts and Sciences*

Dr. John Schoppert, *University Librarian*
Carrie Dickson, *Director of Online Operations Instructional Design*
Wendy Ivie, *University Registrar*
Michelle Marie, *Program Representative 1, Registrar's Office*
Ashlie Pence, *Associate Registrar*
Deanne Pandozzi, *Interim Director of Retention Services*
Craig Campbell, *Executive Director, Oregon Manufacturing Innovation Center Research and Development (OMIC R&D)*
Michele Vitali, *Operations and Policy Advisor, Oregon Manufacturing Innovation Center Research and Development (OMIC R&D)*
Josh Koch, *Business Development Manager, Oregon Manufacturing Innovation Center Research and Development (OMIC R&D)*

Finance and Administration

John Harman, *Vice President for Finance and Administration*
Thom Darrah, *Director, Facilities Management Services and Capital Planning*
James Lake, *Facilities Maintenance Supervisor*
Connie Atchley, *Associate Vice President and Chief Information Officer*
Carl Agrifoglio, *Director of IT Operations and Systems Administrator*
Tony Richey, *Chief Technology Officer*
Doug Tripp, *Executive Director of Resilience Emergency Management and Safety (REMS)*
Ed Daniels, *Director of Campus Safety*
Jason Roach, *Environmental Health and Safety Officer*

Student Services

Dr. Erin Foley, *Vice President for Student Affairs and Dean of Students*
Dr. Mandi Clark, *Interim Vice President of Student Affairs, Associate Vice President for Student Affairs, Dean of Students*
John Van Dyke, *Director of Athletics*
Greg Stewart, *Associate Director of Athletics*
Josh Winter, *College Union Manager*
Gaylyn Maurer, *Administrative Director of Integrated Student Health Center (ISHC)*
Thomas Arce, *Director of Student involvement and Belonging, Interim Director of Career Services*
Josie Hudspeth, *Student Affairs Systems Manager*
Don Stockton, *Director of Veteran Services*

University Advancement

Dr. Ken Fincher, *Vice President for University Advancement, Executive Director Oregon Tech Foundation, Interim Board Secretary*

Consulting team:

Soderstrom Architects - Planning

Mike Shea, *Project Manager*
Eric Talbot, *Design and Planning*

ColeBreit Engineering - Building Assessments

Bill Caron, *Project Manager, Mechanical Engineering*
Katie Cornelius, *Electrical Engineering*

EDT Engineers - Geothermal Power Plant Assessment
David Williams, *Mechanical Engineer*

Fluent Engineering - Site Geothermal, Electrical and Chilled Water Assessment
- Portland-Metro Campus Building Assessment
Jeremy Wenger, *Project Manager*
Matt Cash, *Electrical Engineer*
Brian Brown, *Mechanical Engineer*

Kittelson & Associates - Traffic Engineering
Phill Worth, *Project Manager*
Miranda Barrus, *Traffic Engineer*

ZCS Engineering & Architecture - Site Civil Infrastructure, Structural Building Assessments
Malia Waters, *Civil Engineer*
Steven Davidson, *Structural Engineer*

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Acknowledgements

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1.0 Introduction

Background

About the University

Oregon Institute of Technology (Oregon Tech, the University) is a public university based in Klamath Falls and
the Portland metropolitan area, with a presence throughout the Pacific Northwest. We're also Oregon's only polytechnic university, meaning we emphasize technical subjects and applied sciences, and encourage students to pursue their passions and professional opportunities through internships, externships, and field experiences.

Founded in 1947 as an institution to train and re-educate World War II veterans, Oregon Tech has grown immensely in size, scope, and service. Today, we're accredited by the Northwest Commission on Colleges and Universities, and our student population totals nearly 5,000, making student-to-faculty ratio 16:1.

Officially recognized as Oregon's Polytechnic University, we specialize in engineering, technology, healthcare, business, communication, and applied sciences such as psychology and environmental sciences. Our faculty and industry partners work hard to ensure students have the resources and training to tackle the challenges of both today and tomorrow.

Oregon Tech's real-world focus produces results, too: 96 percent of our students are either employed or enrolled in graduate school within six months of graduation, with average starting salaries of $60,000 per year.

Hands-On Education

Our individualized and applied approach to teaching, which blends theory and practice, is the main reason our graduates are so avidly recruited. Whether they study software engineering, vascular technology, management, or dental hygiene, Oregon Tech students have amazing opportunities to apply what they learn in lab-based classes, clinics, externships and workplaces. This practical focus is reinforced in the classroom by instructors who come to Oregon Tech with relevant business, industrial, or clinical experience.

Campus Locations

In Oregon, our traditional, residential campus is in Klamath Falls; our Portland-Metro campus is in Wilsonville; and we have a dental hygiene partnership with Chemeketa Community College in Salem. In Washington, the University offers degrees to employees of Boeing. Degrees can also be earned from anywhere through Oregon Tech Online.

The main residential campus is located in Klamath Falls in beautiful Southern Oregon. Klamath Falls, a city of about 20,000 residents (45,000 in urban growth area), is located in south-central Oregon, about 20 miles from the California border. Known as Oregon's "City of Sunshine," Klamath Falls enjoys about 300 days of blue skies each year.

Our campus in Klamath Falls is nestled on the eastern slope of the Cascade Mountains. The 190-acre campus offers spectacular views of Upper Klamath Lake, pine-studded knolls, and snow-capped peaks from nearly every building. It takes about five hours to drive to Klamath Falls from Portland, about three hours to drive from Eugene, about five hours from Reno, NV, and just under three hours from Redding, CA.

Oregon Tech's Portland-Metro campus is located 15 miles south of downtown Portland, in the community of Wilsonville. In the heart of the Silicon Forest, the Portland-Metro Campus is designed to provide an industry- focused educational experience to students. It takes about three hours to drive to Portland from Seattle, WA.

Oregon Tech Online lets students finish their certificate, associate, bachelor, or master's degree without

leaving their home or office and without the hassles of travel, childcare or giving up their current job. Partnership is an Oregon Tech core value. We appreciate the opportunity to work with other educational institutions and the business community in preparing our graduates to lead, achieve and succeed in the real world.

The bachelor degree program in Salem is a partnership between Oregon Tech and Chemeketa Community College. The classrooms and dental hygiene clinic are in Chemeketa's state-of-the-art Health & Science Building. Dental hygiene classes are taught on the Chemeketa campus with an occasional mix of online learning. Students learn and practice dental hygiene skills in the campus-based clinic where they see patients.

Oregon Tech also offers programs in partnership with Boeing in Seattle. Classes are offered on site in the Puget Sound area. Classes requiring laboratory facilities may be held at local area community colleges with Oregon Tech instructors.

University Mission

Oregon Tech, Oregon's public polytechnic university, offers innovative, professionally-focused undergraduate and graduate degree programs in the areas of engineering, health, business, technology, and applied arts and sciences. To foster student and graduate success, the university provides a hands-on, project-based learning environment and emphasizes innovation, scholarship, and applied research. With a commitment to diversity and leadership development, Oregon Tech offers statewide educational opportunities and technical expertise to meet current and emerging needs of Oregonians as well as other national and international constituents.

Oregon Tech Vision and Values

Oregon Tech will be a student-centered, world-class polytechnic university that inspires students to become tomorrow's leaders.

We are guided by:

- Student Success: Prioritizing student and graduate success in every decision or action at every level of the university.
- Integrity: Adhering to the highest standards of ethical principles.
- Respect: Demonstrating high regard for one another in interactions and treating others with dignity.
- Diversity, Equity, Inclusion: Welcoming and empowering individuals of differing backgrounds, identities, and life experiences.
- Service: Contributing to the well-being of our university and external communities.
- Accountability: Taking responsibility for our actions and demonstrating leadership.
- Excellence: Embracing and celebrating the highest quality standards in teaching, research, and innovation.
- Confidence: Exhibiting pride and conviction in our university, our talent, and our contributions to those around us.

Oregon Tech Together - Five-Year Strategic Plan

The Facilities Master Plan (the Plan) attends to all pillars of *Oregon Tech Together*, the University's five-year strategic plan for 2021-2026. The Plan prioritizes learner-focused environments that are welcoming, respectful, inclusive, and offer a sense of belonging to students.

Oregon Tech Together, created in 2020, documents goals, objectives and actions, built collectively by University stakeholders, and serves as a five-year roadmap to guide our trajectory of student, university, and community success. It builds upon previous goals and actions taken by the University and moves the campus forward to address the changes in and challenges of higher education in the state, region and nation.

Operationalizing *Oregon Tech Together,* the capital project Major Recommendations are a key outcome of the Plan and continue equal access to programs, facilities, and activities. The Plan's process prioritized inclusiveness and collegiality through open engagement, mutual respect, and acceptance of diverse perspectives. The Major Recommendations were developed through transparent communication with stakeholders and are based on data-driven decision making. Those data points are published as part of this Facilities Master Plan and are included in their entirety as section 11.0 Appendices.

From the onset, collaboration with the University's stakeholders was considered vital to ensure a cohesive sense of purpose and pride across all University locations. Thoughtful consideration and a wide array of stakeholder input was purposefully sought to ensure inclusion of physical and intellectual space for discovery, engagement, and creative activities among students, faculty, staff, and alumni.

Leveraging collaboration with industry, government agencies, and other polytechnic partners is a fundamental component of the Major Recommendation capital projects. This type of collaboration lends itself to sustaining leading-edge technology in the classroom and laboratory. It also increases opportunities and support for professional development of faculty and staff to advance skill sets in their respective fields.

It was important that this Plan operationalize aspects of all four pillars of the University's strategic plan through each of the academic and administrative areas at Oregon Tech, in partnership with all stakeholders.

View *Oregon Tech Together*, Five Year Strategic Plan 2021–2026 here:
https://www.oit.edu/about/strategic-plan

Oregon Tech Academic Master Plan

Oregon Tech's Academic Master Plan builds upon the University's vision for the future as a student-centered, world-class polytechnic university that inspires students to become tomorrow's leaders.
The Academic Master Plan charges to develop academic vision and mission statements for Oregon Tech, as Oregon's Polytechnic University, fiscally sustainable growth through an array of innovative, forward-looking academic programs, initiatives that will increase enrollment, retention, and four-year graduation rates, and a path for progress in entrepreneurial and collaborative applied research.
View the Oregon Tech Academic Master Plan 2022–2027 here:
https://www.oit.edu/sites/default/files/2022/documents/AMP%202022-1121.pdf

Oregon Tech Land Acknowledgement

KLAMATH FALLS: Oregon Tech resides on the ancestral homelands and traditional territory of the Klamath, Modoc, and Yahooskin Nations who have stewarded this land since time immemorial.
PORTLAND-METRO: Oregon Tech's Portland-Metro campus resides on the ancestral and contemporary home of the Clackamas, Kathlamet, Multnomah, the Tualatin Kalapuya People, Tumwater, and the Watlala bands of the Chinook, who have stewarded this land since time immemorial.

We also respectfully acknowledge the many tribes and bands of the Klamath Basin region, the many Indigenous nations and lands along the Columbia, and the continued sovereignty of the nine tribes of Oregon and Northern Californian tribes that have ties to this land. It is important to acknowledge the ancestors of this place and to recognize that we are all here because of the sacrifices forced upon them. We also respectfully acknowledge the many Indigenous nations, bands, and tribes lands along the Columbia River. In doing so, we hope to honor their legacy and lives, as well as continue to build the relationship with the Native peoples of this region, the state of Oregon, and across the United States.

Facilities Master Plan Goals

This Facilities Master Plan (Master Plan, the Plan) effort has been undertaken to review the condition of University facilities and to identify near-term and long-term improvements that support *Oregon Tech Together*, the University's five-year strategic plan which was completed in 2020.

Specifically, the Strategic Plan identifies under "Pillar IV – Commitment to Institutional Excellence" a measurable outcome of developing "[a] facilities master plan that is reflective of the objectives of the strategic plan and promoting university pride."

Just as the University's Strategic Plan has a focus on measurable outcomes, so does this Facilities Master Plan. The Plan covers both the Klamath Falls campus and the Portland-Metro campus. It identifies facilities needs and costs in two-year, 10-year and 15-year intervals, as well as longer range possibilities.

Facilities Master Plan Approach

The development of the Facilities Master Plan involved first assessing the built environment to determine actions required to maintain and improve the existing facilities. Following that, individual stakeholder interviews were conducted with faculty, staff, and students to determine what opportunities exist for measures to support the Strategic Plan in general as well as individual programs. The stakeholder interviews also focused on University pride to elicit ideas on how physical changes can help develop Oregon Tech's esprit de corps.

A number of discrete studies were pursued:

1. Facilities condition assessments of selected older buildings;
2. Condition assessment of campus infrastructure;
3. Condition assessment of the large geothermal power plant;
4. Study of space utilization of general use classrooms and conference rooms;
5. Individual stakeholder interviews with nearly 50 senior staff, faculty and students;
6. A study of campus identity;
7. Parking and traffic analysis; and
8. Review of respective city planning documents and public works plans.

Klamath Falls Campus – History and Land Use

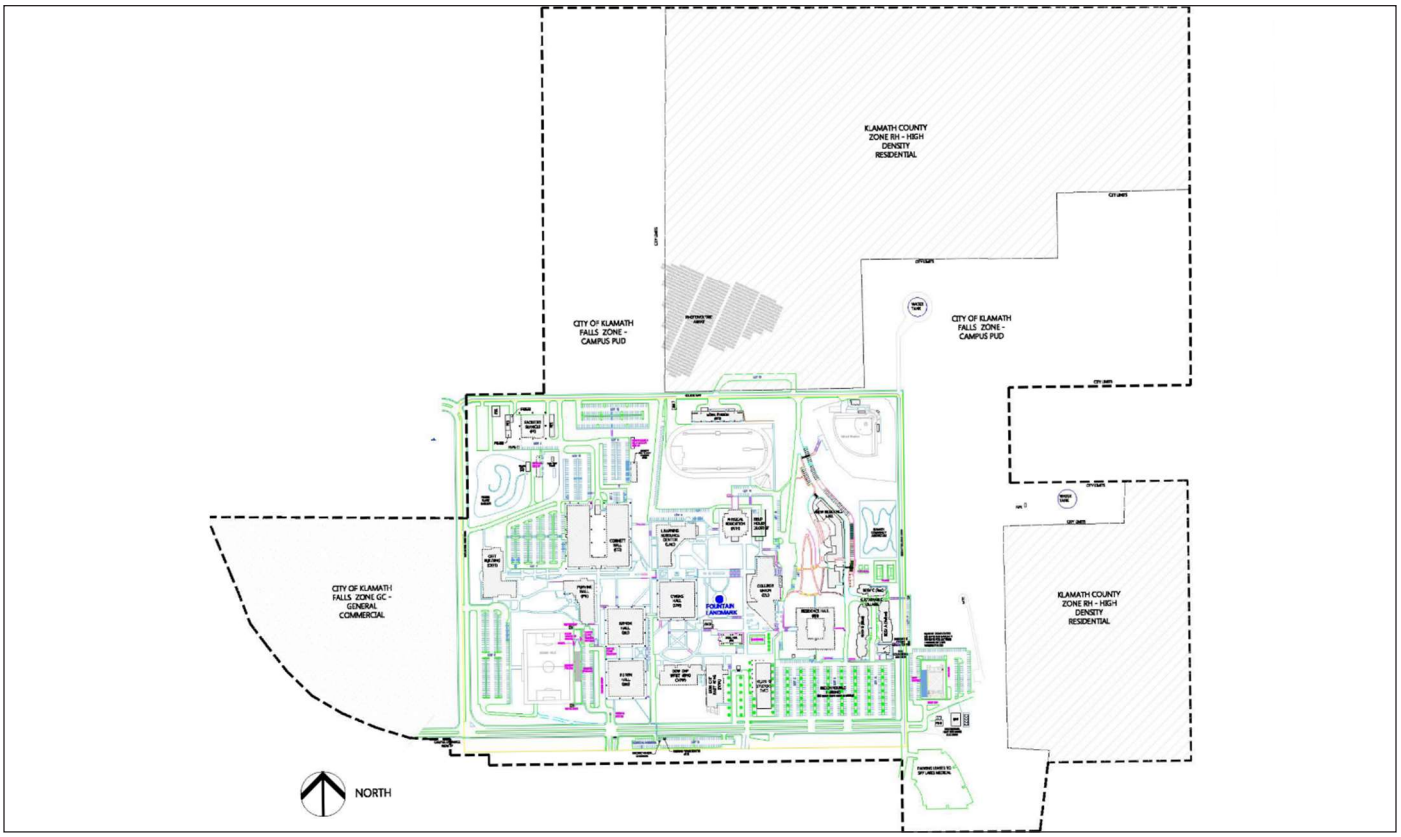
The Klamath Falls campus site was acquired in 1959 and the campus plan was created in the Mid-Century Modern or International paradigm of that era by Skidmore Owings and Merrill Architects, one of the premier national architectural firms of the 20th century. The plan was originally laid out on a 70-foot square grid, which overlaid the existing hillside and formed the basis for terracing the hillside. The same 70-foot grid was used internally for most of the initial buildings: Semon Hall, Owens Hall, and Boivin Hall, Cornett Hall, Facilities Services, and Snell Hall, but not the Athletics building or College Union, which was originally the library.

Original campus preliminary blueprint with 70 foot grid

The campus is one of the few on the west coast that was conceived and built all at once, with a single plan and architectural aesthetic.

The original plan envisioned several smaller residence halls set on the second-highest terrace; however, the final design had a single large residence hall, which was distinguished from the academic buildings by being designed in what is now called the “brutalist” style, which emphasizes exposed raw concrete.

The campus is unique in that it is bounded by perimeter roads forming a “ring” around the developed campus. All of the buildings and developed grounds are inside this ring road. The original slope of the land inside the ring road was terraced for development of buildings, parking, and athletic fields. It comprises about 100 acres and is shown below in color. Oregon Tech-owned land outside the ring road comprises an additional 264 acres, shown below by the dashed black line. A portion of the land outside the ring road to the southeast is leased to Sky Lakes Medical Center (Sky Lakes) as a parking lot.



Land owned by Oregon Tech in Klamath Falls

Land Use	Area	Percentage
Total Inside Ring Road	100.0 acres	27.0% of Total Land Holdings
Buildings	10.8 acres	10.8% inside Ring Road
Parking	14.8 acres	14.8% inside Ring Road
Athletic Fields	11.8 acres	11.8% inside Ring Road
Landscaping, Sidewalks, Roads	62.6 acres	62.6% inside Ring Road

Total Outside Ring Road	264.0 acres	63.0% of Total Land Holdings
Oregon Tech Parking Lots D and P	0.7 acres	0.2% outside Ring Road
Parking Leased to Sky Lakes	5.0 acres	2.0% outside Ring Road
Undeveloped plus Power, Geothermal, Water and Stormwater Infrastructure	258.3 acres	97.8% outside Ring Road

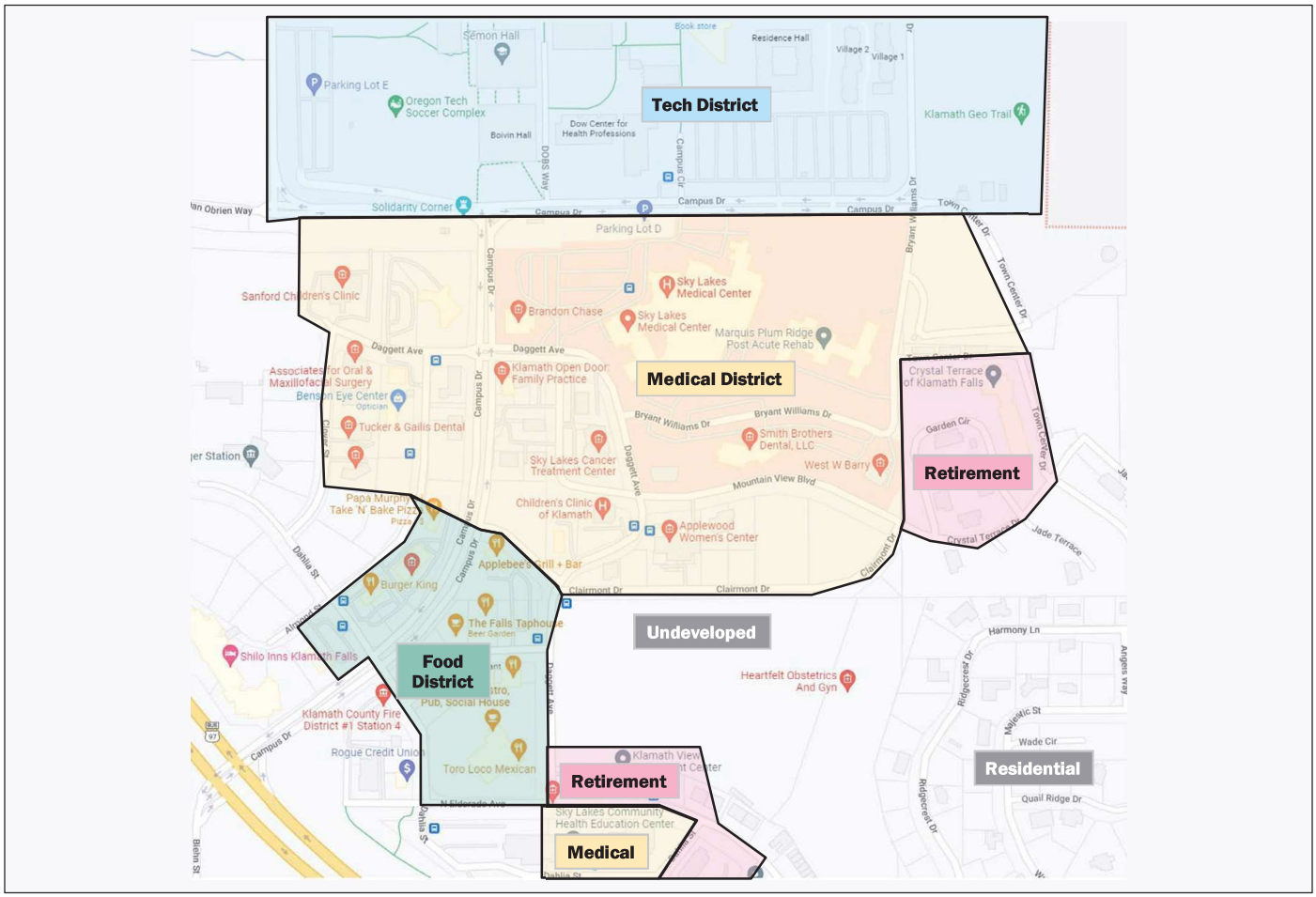
The area inside the ring road creates a relatively compact campus. The maximum distance from one end of the campus to another is less than a half mile. The advantages of a compact campus include:

1. Lower infrastructure costs due to shorter runs of utilities;
2. Easier and quicker pedestrian access between buildings;
3. Easier and quicker access for maintenance staff, allowing greater work time efficiency;
4. Reduced area of sidewalks requiring snowmelt coils or plowing, with reduced operational costs;
5. Reduced area requiring night lighting, with consequent reduced installation and operational costs;
6. Reduced irrigated landscaping, with reduced operational costs and reduced water use; and
7. Stronger mental image of campus, leading to more enjoyment of and affection for the campus.

Even within this compact campus, almost 62 percent of the land area is in open space. This indicates that for future development there is adequate available land within the ring road.

The undeveloped land outside of the ring road is all within the Klamath Falls Urban Growth Boundary, so it can be developed without any state-level land use action. Some of the land is outside the City limits and has been zoned for High Density Residential use by Klamath County. The land within the City limits is zoned Campus Planned Use Development, except for a parcel along Dan O'Brien Way to the west, which is zoned General Commercial.

When first occupied in 1964, there was no development at all along Campus Drive between Highway 97 and the campus. The campus was quite isolated from the City. A year later, the first hospital was built on the Sky Lakes site, and gradually development along Campus Drive increased.



This has evolved into four ad hoc districts or clusters of similar land uses south of the Oregon Tech campus. Just south of the Oregon Tech campus, there is a medical district which includes the Sky Lakes Medical Center and nearby medical clinics. There is a retirement home district including the Crystal Terrace complex, Klamath View Retirement Center, and Pacifica Senior Living. Close to Highway 97, there is a restaurant district and further to the southeast, there is a residential area.

The original main campus entry shown on the preliminary blueprint was and still is Campus Circle, which is designed as a boulevard, with a central median and a drop-off or turnaround in front of Snell Hall.

Portland-Metro Campus – History and Land Use

Oregon Tech acquired the former corporate headquarters of In-Focus in Wilsonville in 2010 for the purpose of consolidating multiple academic programs operating at various locations throughout the region. The former In-Focus building became the now Portland-Metro Campus (Portland-Metro, the Building). The Portland-Metro
Campus consists of a 138,000 SF, four-story building on 6.8 acres of land in a suburban office park. The Building footprint is only 0.8 acres and the rest of the site is fully developed with parking, landscaping, and stormwater treatment facilities.

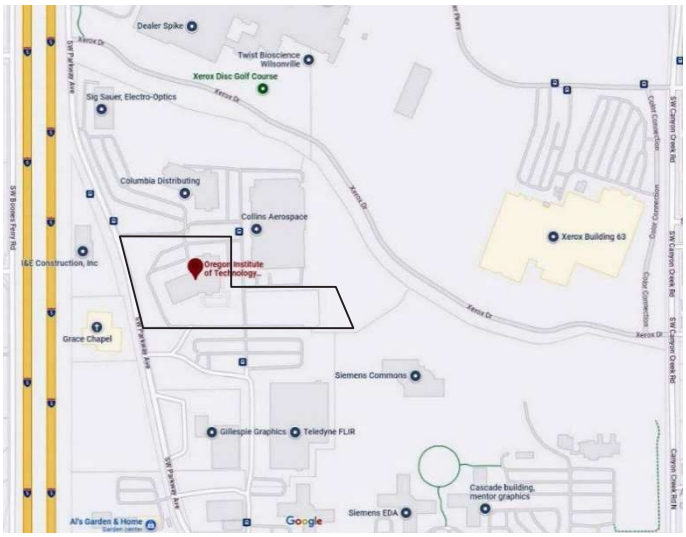
The third floor of the Building is leased to Collins Aerospace and that firm also has another building across the parking lot from the Portland-Metro Campus Building. Other notable neighbors across the parking lots are Teledyne Flir, Sig Sauer Electro-optics, Mentor Graphics and Siemens EDA. Somewhat further away, 1,000 feet from the Portland-Metro Building, is Twist Bioscience, a semiconductor-based manufacturer of synthetic DNA and 1,900 feet away is ESS, a manufacturer of utility scale battery storage systems.

Currently, Oregon Tech also leases space for Manufacturing and Mechanical Engineering and Technology (MMET) shops and student spaces in the Canyon Creek Business Park about a mile to the north of the Portland-Metro Campus Building.

The zoning for the area is Planned Development Industrial, which allows almost any use related to industry. At the time of purchase, the City of Wilsonville saw Oregon Tech as being closely related to industry and therefore allowable as a new use after In-Focus left the site.

When In-Focus developed the property in 2002 for use as a corporate headquarters, there was a requirement for a large number of parking spaces. There are 507 spaces on site now. As of June 2023, new rules by the Land Conservation and Development Commission prohibit minimum parking requirements from being set by cities or counties in the largest metropolitan areas. There are no longer any parking requirements for this site.

When this rule was implemented, Oregon Tech in effect gained six acres of developable land at no cost.



Portland-Metro Vicinity Plan

2.0 Executive Summary

Executive Summary

Key Analysis Findings

Executive Summary

The Facilities Master Plan was developed in collaboration with faculty, administrative staff, and students by a team of architects and consulting engineers with experience with the Klamath Falls and Portland-Metro campus facilities. The resulting recommendations for facilities growth and renewal have been made based on physical facilities repair needs, current facilities use, and program growth expectation.

Key Analysis Findings

1. Using the Facilities Condition Index (FCI), several buildings have been identified as being in need of renewal. The FCI is a commonly used objective scale for assessing needs for repair or replacement. This rating system is based purely on the physical condition of the building, and does not assess energy use, seismic code compliance, comfort, or suitability for current pedagogy. The Learning Resource Center (LRC) has an FCI rating of Poor and is most in need of renewal. Purvine and Semon Halls are also rated Poor, although they are not as severely in need as the LRC.

   Without planned repair and renewal, these facilities can be expected to deteriorate to the Critical category, which is characterized by sudden unplanned breakdowns, potentially putting the buildings out of use until repairs can be made.

   In addition, these buildings do not meet current seismic codes; they are susceptible to additional damage and may pose a danger to the users. For example, in the last major earthquake, enough brick cladding fell off the Learning Resource Center that it was decided to replace the cladding with an exterior stucco system. However, the underlying structure was never upgraded, so the same forces will have the same effect in the next seismic event.

2. General use classroom space is underutilized on each campus. This suggests that programs needing new specialized spaces can be accommodated by renovating general use classroom space in existing buildings, rather than by constructing new buildings.

3. A need for student housing on the Portland-Metro campus could be satisfied with new development of the site. When the campus was originally acquired, the city zoning in place prevented any further construction on the site. Since then, changes in policy by the Land Conservation and Development Commission (LCDC) have resulted in zoning changes that allow further site development.

4. A number of opportunities to improve campus life and enable expansion of some programs have been identified.

5. The geothermal power plant, which has been dormant, has been reviewed and found to have no critical issues preventing its reactivation based on the limited infrastructure assessments contained within this Facilities Master Plan, cost and other factors would need to be taken into account to determine if a reactivated plant would ultimately be operational and financially viable.

3.0 Campus Identity

Conceptual Framework

The Oregon Tech District — Klamath Falls

The Campus Sense of Place — Klamath Falls

Conceptual Framework

The analysis framework is based on research by Massachusetts Institute of Technology urban planner Kevin Lynch, as described in his seminal work: The Image of the City. This was the result of five years of work funded by the Rockefeller Foundation. The study was a breakthrough in planning because it examined the average person's perspective of inhabited areas and how people interpret and navigate through their environment. The book discussed the ways people create mental maps of the areas where they live and work using specific, observable characteristics. They then use these to navigate throughout their environment. These characteristics are:

- Paths used to get from one place to another, whether by foot or vehicle;
- Edges that form a clear visual boundary where the environment is visibly different on each side of the edge;
- Landmarks that are visually significant objects in space used for orientation;
- Nodes that are clusters of more intense human activity or interaction surrounded by less or no activity; and
- Districts that are larger regions of many activities that have something in common.

Areas like cities or campuses can have strong images or identities, or they can have weak ones. A strong image creates feelings of pleasure, competence, or wellbeing as a person moves through the environment in their daily activities. A place with a strong image is one that is enjoyable, and that inhabitants may develop an affection for. A college campus is a smaller version of a city, and a sense of place is created by a strong campus image.

The Oregon Tech District – Klamath Falls

The Oregon Tech campus forms a district at the edge of the Klamath Falls city limits and at the edge of the urban growth boundary. The campus building types, sizes, parking areas and landscaping all read together as a cohesive, university-related district.

Because of the terrain, much of the medical district anchored by Sky Lakes Medical Center to the south is not visible from campus. The most notable views are of the undeveloped grassland hills to the north and of Klamath Lake to the west. The food, residential, and retirement districts to the south are not visible at all, despite being within a short walk from campus.

The Campus Sense of Place – Klamath Falls

The strength of the campus identity is enhanced by the ring road around campus that forms a strong edge to the campus. Within the campus, a clear path exists that runs from the College Union to the Center for Excellence in Engineering and Technology (CEET). Many of the campus buildings are aligned along this path and it creates the primary route of pedestrian movement on campus. At any one time, but especially when classes begin and end, there are more pedestrians moving along this path than anywhere else on campus.

When traveling west or downhill, the path is strengthened by the frequent, scenic views of Klamath Lake and the Cascade Mountains beyond. The Purvine Fountain forms a landmark, but its significance is weakened by being off to the side of the main path, and partially enclosed by sloping terrain.

A lesser path runs from Parking Lot A across the edge of the College Union to the Athletics Building.

Landscaping is also an important component in creating a sense of place. The green of the lawns and trees contrasts with the dry grass and shrubs of the adjacent hills and makes the campus stand out.

When making changes to the campus, it is important to consider the impact on the sense of place within the context of this conceptual framework. New development should be reviewed in terms of the conceptual framework to enhance the sense of place.

4.0 Major Recommendations

Criteria

Summary – Major Recommendations

Detail – Major Recommendations

Recommendations have been made on a holistic basis, combining considerations of:

1. Physical facility condition;
2. Needs of academic programs;
3. Needs of student life;
4. Observations by students, faculty and staff; and
5. City requirements for area planning and traffic.

Drawings have been provided to illustrate the recommendations and should be viewed as conceptual guidelines, rather than literal depictions of what development should look like.

Recommendations are not listed in any particular priority in order to preserve flexibility over time to implement measures as funding opportunities are achieved and as programs are developed.

Summary – Major Recommendations

Learning Resource Renovation — Building Renovation & Incorporate a Center for Student Success

- Facilities Condition Rating of "Poor."
- The south wing is sinking, and the structural frame needs seismic strengthening. There are obsolete spaces unused by any campus program, with inefficient and uncomfortable HVAC and lighting systems.
- A complete renovation would remedy these issues and also provide new space for Student Services related to administration.

Purvine Hall — Building Renovation as a Dental Program Center

- Facilities Condition Rating of "Poor."
- Requires seismic strengthening, and contains unused and seldom used general classroom space.
- A renovation can provide space for an expanded Dental Hygiene Program to relocate to the building.

Semon Hall — Building Renovation

- Facilities Condition rating of "Poor."
- Requires seismic strengthening, building envelope energy conservation upgrades, and replacement of HVAC and lighting systems.

Develop New Seating and Restrooms for the Soccer Field

- Provide new concrete seating, restrooms, and changing rooms for the soccer field to enhance campus amenities and student life activities.

Develop New Parking for Dental Clinic Patients and Visitors, Reconfiguration of Campus Drive

- Add a new parking lot to serve visitors, the soccer field, and the dental clinic.
- Configure the entry to clarify traffic flow at the intersection of Campus Drive and Dan O'Brien Way.

New Center for Student Success — Locate New Building at Campus Circle

- Locate a new Center for Student Success building at main campus entry to provide easily accessed and consolidated Student Services, which are currently separated in inadequate facilities.
- The proposed new building location maintains a compact campus configuration, which provides aesthetic benefits as well as lower infrastructure costs when compared to other sites.
-

Parking Lots A and B — Reconfigure and Repair

- Parking Lots A and B are in poor condition and needs repaving.
- Rather than repave them as is, it is recommended that they be regraded for higher parking

efficiency and improved accessible parking.

Renovate the College Union

- A renovation of the College Union would provide seismic strengthening, energy efficient lighting and mechanical systems, improved accessibility to the auditorium, improved visibility for the bookstore and additional space for student activities.
- A renovation would also increase appeal to the current generation of college students, as current interior finishes have not been upgraded for 20 years.

Provide an Outdoor Elevator to Connect the Upper and Lower Campus

- Provide a freestanding, all-weather elevator to connect upper and lower campus areas and improve accessibility.
- Currently the elevator in the Athletics Building is the only way that a wheelchair user can get from the upper terraces of campus to any of the academic buildings at the lower terraces.
- When the Athletics Building is closed, the lower part of campus is not accessible.

Large Geothermal Power Plant — Repair and Refresh

Repair the currently nonfunctional geothermal power plant to generate a renewable source of power for the University and has the potential to produce power that may be valued up to about $500,000 annually, based on current estimates in 2023 dollars.

Provide a Field House Adjacent to the Athletics Building

- Construct a new field house for athletics to protect student athletes from harsh weather and extend the seasons for comfortable student athlete practices and workouts.

Provide a New Storage Building for Facilities

- New storage building for Facilities Management

Provide New Greenhouse and Field Station

- Provide a new field station for the new environmental program, with a new greenhouse for a recently awarded research grant.

Provide New Housing at Portland-Metro Campus

- Develop unused parking area on the Portland-Metro campus into apartment-style housing.
- This housing would fill a need for market-rate housing near the campus and would serve individual students, students with families, faculty members, and visiting instructors with ground floor market café.

Refresh Residence Hall at Klamath Falls Campus

- Refresh visual aspects of the original residence hall to improve morale for students living there, as well as upgrade greater campus morale and sense of place.

Develop Apartments and Academic Buildings West of Industrial Drive

- Increase development within the campus area by developing market-rate apartments south of the ravine and industry-academic collaboration spaces north of the ravine.
- This increased development would address local housing needs as well as build critical mass for new retail to support the campus community.

Develop an Event Center on Campus Drive

- Develop an event center to provide campus facilities to host conferences and events, as well as serve the greater region in collaboration with regional stakeholders.

Campus Entries and Signage

- Develop visual cues to identify Tech's presence and sense of place.

Expand Integrated Student Health Center

- Expand the student health center.

Outdoor Amphitheater

- Regrade and landscape existing lawn to create an outdoor amphitheater.

New Access Road

- Develop a new access road to provide more direct access to the western part of the campus from Dan O'Brien Way.
- This will also provide access to university-industrial collaboration facilities and separate them from the proposed new residential development.

Detail — Major Recommendations

Recommendation: Learning Resource Renovation — Building Renovation & Incorporate a Center for Student Success

Learning Resource Center

The Learning Resource Center (LRC) provides typical library services to the University and includes a specialty library, the Shaw Historical Library. It is the location for many student services:

1. Tutoring,
2. Testing,
3. The Student Success Center,
4. Career Services, and
5. Academic Advising & Retention

The LRC also provides rooms that students can reserve for group study. Additionally, it serves as the location of the instructional design staff who help faculty with online and active learning course design.

Space Availability

The LRC has recently served as temporary space for several groups, such as Information Technology Services (ITS), which will return to Boivin Hall when the renovation of that building is completed. The LRC has a television studio that is currently unused. Additionally, some time ago library staff culled old materials and freed up substantial floor space. The building will soon have significant available space.

Student Services

Student Services are of two types: those which students use to relate to the University or academic growth, and those which students use to relate to each other or for personal growth and recreation.

It is recommended that the first type of services, which students use to relate to the University, be centralized in
the LRC from current locations in Snell Hall and the College Union.

These include:

1. Registrar's Office — currently in cramped, windowless space in Snell Hall basement;
2. Cashier's Office — also in Snell Hall on ground floor;
3. Office of Admissions — currently in cramped, windowless offices in the College Union;
4. Financial Aid — adjacent to Admissions in College Union but with windows;
5. Veteran's Services — currently in windowless space in the College Union;
6. Disability Services – currently in the Learning Resource Center;
7. Student Success Services (tutoring, supplemental instruction, testing and TRiO – currently in the Learning Resource Center);
8. Career Services – currently in the Learning Resource Center; and
9. Document Resource Center — currently in windowless space in the College Union.

By relocating these to the LRC, Student Services related to the University would be collectively located in sorely needed larger offices in a University-funded building. This would also open up space in the student-funded College Union (which is closest to the residence halls) for student-run and student-funded activities that are more related to student personal growth and recreation. The Document Resource Center (DRC) may also be better located in a building that has additional functionality related to paper and materials production, such as the LRC, than in a building related to food and student activities, such as the College Union.

It may also be economically advantageous to develop an addition to the LRC if these student services could not be fit into the building generously with expansion space. Getting these services out of the College Union makes it easier to focus a future renovation of the College Union on student personal and recreational services.

Facility Condition

Another strong reason for renovating the LRC is to address deficiencies with its physical condition. It has a facilities condition index (FCI) of .19, meaning currently expected repair costs amount to 19 percent of the replacement cost of the building. Current major problems include:

a. The ground at the south wing is settling, lowering the floor slab so much that washroom plumbing has had to be reconfigured to accommodate the drop in the floor levels.
b. The HVAC system is almost 40 years old, nearly nonfunctional, and not efficient. Occupants complain that it blows dirt and dust.
c. The lighting needs complete replacement with energy-efficient fixtures designed for the spaces they illuminate. The existing lighting in the main reading room was replaced years ago in a failed upgrade with lighting that is too bright for comfort.
d. The building's original skylights have been covered with metal roofing, which is now rusting and in need of replacement. The original building design utilized these atrium-sized skylight areas to provide substantial daylight. Rather than replace the metal roofing, the skylights should be uncovered and restored.
e. The building does not meet current building code requirements for seismic resistance, posing a potential danger to occupants. In fact, in 1993, a series of earthquakes centered in the Mountain Lakes Wilderness near Klamath Falls caused portions of the original brick cladding of the building to fall off. The tremors during the 1993 Klamath Falls earthquakes were some of the strongest felt in Oregon's history. The two major quakes, which measured 5.9 and 6.0, resulted in the most damage. As a result, the entire brick exterior of the LRC was replaced with an exterior insulation and finish system, but no significant strengthening measures for the structural frame of the building were undertaken at the time.

Recommendation Summary

The LRC building has space which will soon be available when ITS relocates to Boivin. It also has spaces which are not utilized, such as the television studio. This building needs renovation to prevent continued deterioration, a slowly collapsing west floor slab, and issues with seismic safety. It could provide space to consolidate Student Services that are currently located elsewhere on campus and need more room. These services would be a good fit to complement the LRC's current service offerings. This building is a prime candidate for renovation, and it should be a high priority.

Recommendation: Purvine Hall — Building Renovation as a Dental Program Center

Purvine Hall

Dental Hygiene Program Needs

The Dental Hygiene Program (the Dental Program) is currently located in a large portion of Semon Hall, where it has been located since 1969.

The Dental Program is looking to significantly expand in the next 5 to 10 years. Additional clinic, lab and classroom space will be needed within that timeframe. The Dental Program currently has only 22 chairs, which limits the number of students that can be admitted. The Dental Program could admit additional students if they had access to space for additional chairs.

There is an onsite dentist who has two dedicated chairs and needs a total of six, and also needs an additional clinical lab (not hygiene) with 12 chairs.

There is potential for a new Dental Therapy Program and Dental Assistant Program that would need their own respective additional chairs. Currently, these or any other new programs would be required to operate evening-only clinics due to the current chairs being fully utilized.

The Dental Program also needs additional space for a dental materials lab, simulation lab, and classrooms.

Students also need a separate break room for lunch within the same building. There is often only 20 minutes between classes, which does not allow enough time to get to the College Union or other on-campus eateries to eat and return in time.

The Dental Program needs to either relocate to a new building or expand within the existing building, Semon Hall. However, current Semon Hall class and lab activities would need to be accommodated to maintain academic and clinic operations.

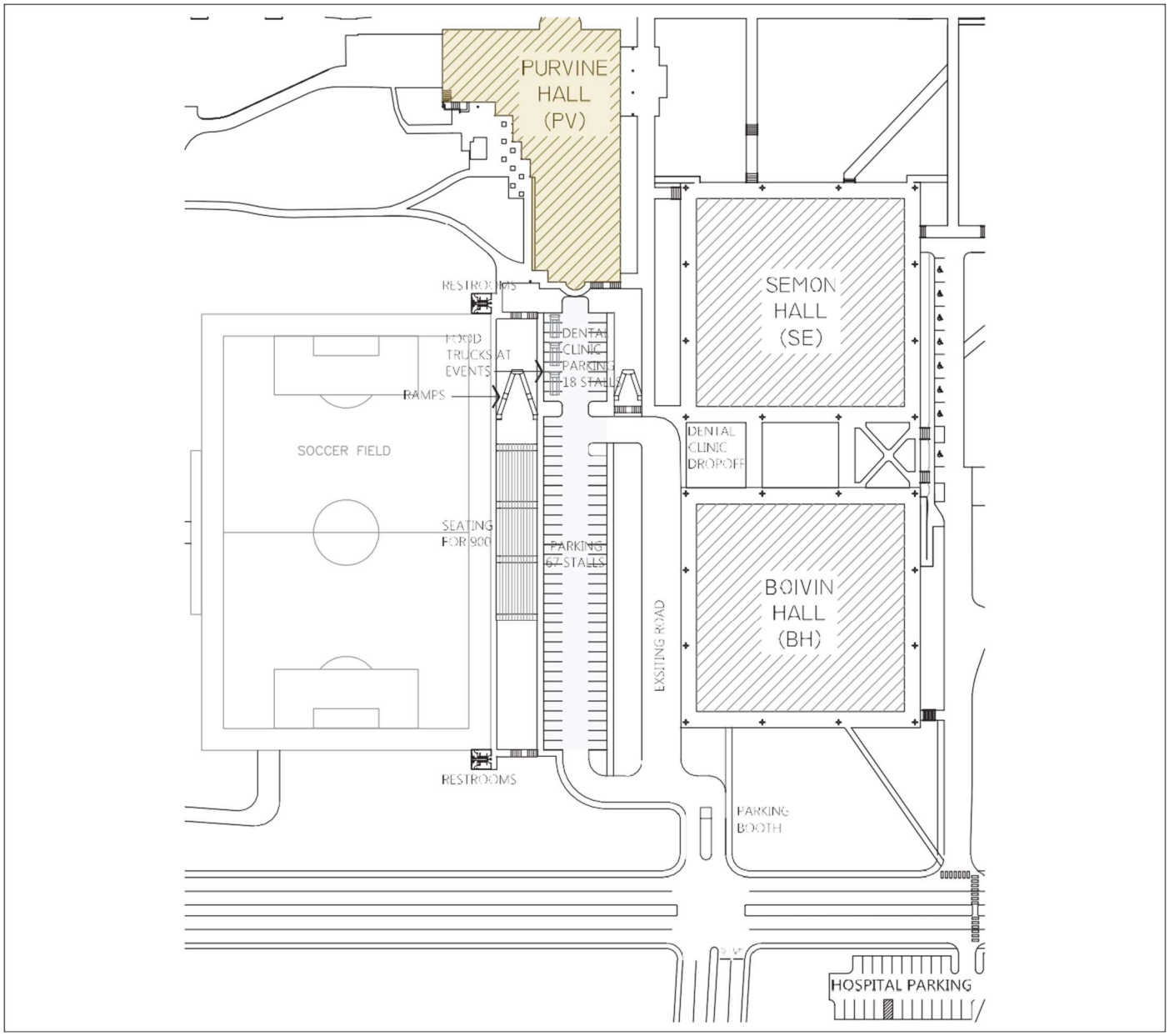
Community Dental Clinic Patient Needs

The Dental Hygiene Program has a community dental clinic with many elderly patients. Patients have reported difficulties with locating parking and then finding their way to the community dental clinic. The distance between the parking area and the community clinic is also large enough to pose difficulties for elderly patients and those with mobility impairments. The lack of a drop-off area further contributes to these issues.

Purvine Hall Space Availability

It is recommended that Purvine Hall be renovated to house the Dental Program. The space utilization review reflects Purvine Hall as having general use classroom space that is underutilized with a 20 to 23 percent utilization rate. The few classes that use the space could be scheduled in another building. This classroom space could then be renovated for the Dental Program, which would leave Purvine Hall with the Dental Program and clinic, ability for future Dental Clinic Program expansion to admit additional students, and possibly some electrical and CSET labs.

Purvine Hall is a good location for the dental clinic because parking for patients can be provided nearby. A proposed plan has been developed that provides a new parking lot on the bench between Boivin and the soccer field. This serves multiple goals, since it can provide parking close to new, recommended seating at the soccer field.



Recommendation Summary

Purvine Hall has a Facilities Condition Rating of "Poor," requires seismic strengthening, and contains unused and seldom used general classroom space. A renovation can provide space for an expanded Dental Hygiene Program to relocate to the building.

Recommendation: Semon Hall — Building Renovation

Semon Hall was one of the original buildings on campus in 1964. It has had no major renovations since the Dental Hygiene Program was located there in 1969. The original design was identical to Boivin and Owens Halls; however, those buildings have since been renovated. The structure is steel framed at the interior with concrete covered steel columns at the exterior porticos. The exterior walls consist of single pane windows in a wood framing system, with asbestos cement panels at opaque areas. A canopy covers all four sides of the building, and the soffit has a coffered configuration.

Semon Hall

The building is the last of the original campus buildings to be relatively untouched since construction in 1964.

The structure's seismic resistance does not meet current codes, nor do the ceilings or interior partitions. Exterior windows are simple 2x6 wood frames with single pane glazing. This results in excessive energy use.

The facilities condition index is .11, meaning that required repairs, including code compliance measures to remedy seismic deficiencies, will cost about 11 percent of the cost of replacing the building.

In addition, the primary occupant of the building, the Dental Hygiene Program, needs additional space in order to admit additional students for the in-demand program, as well as for overall program expansion into other related dental fields.

The Dental Hygiene Program is currently limited in the number of students that may be admitted; the limitation is due to the number of dental operatories they have. There has been no significant upgrade to the Dental Hygiene Program space since 1969, when it first occupied the building. However, the building cannot be renovated with the Dental Hygiene Program in place. Building renovation would severely curtail the Program's operations as well as raise the cost of renovation.

Semon Hall needs renovation for safety, energy efficiency and capital replacement due to normal end-of-life component life spans. The building cannot be renovated in place. The recommended solution is to move the Dental Hygiene Program to Purvine Hall as described elsewhere, allowing Semon Hall to be vacant and renovated while empty.

Recommendation Summary

Semon Hall has a Facilities Condition rating of "Poor" and requires seismic strengthening, building envelope energy conservation upgrades, and replacement of HVAC and lighting systems.

Recommendation: Develop New Seating and Restrooms for the Soccer Field

The soccer field is relatively new, in great condition, and has a spectacular view of Klamath Lake and the mountains. However, it has a small metal bleacher system and no restrooms or changing rooms.

It is recommended that the existing slope at the soccer field be used to construct new concrete seating. The proposed concept below shows seating for 900, but it could easily accommodate more. With the addition of restrooms and hookups for food trucks, this could become an attractive site for hosting tournaments, college-level or high school-level games for the region, and other student life activities throughout the year.

New soccer field seating and restrooms shown next to proposed new parking

Recommendation Summary

Provide new concrete seating, restrooms, and changing rooms for the soccer field to enhance campus amenities and student life activities.

Recommendation: Develop New Parking for Dental Clinic Patients and Visitors, Reconfiguration of Campus Drive

The existing campus topography is well suited for a parking lot that would handle Dental Hygiene Program clinic (Dental Clinic) parking and other campus visitors. An additional parking lot would have desirable adjacencies to nearby buildings and could improve accessibility as well as create a drop-off area for the Dental Clinic, whether or not the Dental Hygiene Program is relocated to Purvine Hall. It is anticipated that visitor parking would most likely occur during hours when the Dental Clinic is closed.

It is recommended that the existing intersection of Campus Drive and Dan O'Brien Way be reconfigured as shown, with a stop sign at Campus Drive. A new visitor parking booth would be constructed on an access drive directly across from the point where Campus Drive intersects Dan O'Brien Way.

This places the visitor parking in the most visible position when descending the hill from the roundabout at Dagget Avenue; the stop sign additionally gives visitors a chance to stop and see the visitor booth directly across the intersection. It emphasizes Dan O'Brien Way as a through street, and the easiest access for students and staff from Highway 97.

New parking

Recommendation Summary

Add a new parking lot to serve visitors, the soccer field, and the dental clinic. Configure the entry to clarify traffic flow at the intersection of Campus Drive and Dan O'Brien Way.

Recommendation: Develop New Seating and Restrooms for the Soccer Field

In the long term, as the Klamath Falls campus population grows and new buildings are needed, the preferred site for a large new building is east of Campus Circle. This would be a desirable location for a new Center for Student Success, rather than co-locating student service departments in the Learning Resource Center (LRC).

New Center for Student Success

New Center for Student Success

A new Center for Student Success would place the Office of Admissions up front at the entry to the campus, and easily accessed by visiting potential students.

It is recommended that the new building house existing Student Services relating to student interactions with the University, such as:

10. Registrar's Office — currently in cramped, windowless space in Snell Hall basement;
11. Cashier's Office — also in Snell Hall on ground floor;
12. Office of Admissions — currently in cramped, windowless offices in the College Union;
13. Financial Aid — adjacent to Admissions in College Union but with windows;
14. Veteran's Services — currently in windowless space in the College Union;
15. Disability Services – currently in the Learning Resource Center;
16. Student Success Services (tutoring, supplemental instruction, testing and TRiO – currently in the Learning Resource Center);
17. Career Services – currently in the Learning Resource Center; and
18. Document Resource Center — currently in windowless space in the College Union.

Relocation of these six student-focused service areas would free up available space in the other buildings, mainly the College Union.

With more space available, the College Union could be a place that emphasizes student recreational and personal growth opportunities. Note that it would not be necessary to connect the College Union to a new Center for Student Success building. No other buildings on campus are currently connected like this.

Site Advantages

The advantage of placing a building at this site is that it would form a boundary for the Campus Circle space, with Dow Center and Snell Hall forming the other sides of this outdoor "room." It would also shield Parking Lots A and B from view as one approaches the campus.

Whether the new building at this site becomes a Center for Student Success or a new academic building, one key point is that it is placed within the existing ring road around campus. This directs campus growth into a more compact configuration and limits sprawl.

The advantages of a compact campus include:
1. Lower infrastructure costs due to shorter runs of utilities, less material needed, and less labor for installation;
2. Easier and quicker pedestrian access between buildings;
3. Easier and quicker access for maintenance staff, allowing greater work time efficiency;
4. Reduced area of sidewalks requiring snowmelt coils or plowing and consequent reduced installation and operational costs;
5. Reduced area requiring night lighting, with consequent reduced installation and operational costs;
6. Reduced irrigated grounds and landscaping, with consequent reduced installation and operational costs and reduced water use; and
7. Potentially stronger mental image of campus, leading to more enjoyment of and affection for the campus and University.

Recommendation Summary
Locate a new Center for Student Success building at main campus entry to provide easily accessed and consolidated Student Services, which are currently separated in inadequate facilities. The proposed new building location maintains a compact campus configuration, which provides aesthetic benefits as well as lower infrastructure costs when compared to other sites.

Recommendation: Parking Lots A and B — Reconfigure and Repair
Parking Lots A and B were originally laid out in 1964 and have not been reconfigured since that time. The layout does not efficiently utilize space. Additional parking can be fit into the same space with reconfiguration, using current standards in parking stall and aisle sizes. The infrastructure assessment has shown that both lots need extensive repairs, estimated at $2.7 million.

It is recommended that this repair work be done simultaneously with a reconfiguration for greater efficiency and to prepare a site for a future building on Campus Circle. Parking lot reconfigure and repair work can also address some accessibility issues with the current conditions of parking and adjacent sidewalks.

Parking Lots A and B

Recommendation Summary
Parking Lots A and B are in poor condition and needs repaving, subsequently completed fall 2023. Rather than repave them as is, it is recommended that they be regraded for higher parking efficiency and improved accessible parking.

Recommendation: Renovate the College Union

College Union

Student Services

Once student services are relocated from the College Union (CU), either to the LRC or to a new Center for Student Success building, space will be available in the CU for student services related to recreation and personal growth.

This would create an opportunity for the CU to provide new, dedicated spaces for student clubs. Additionally, the CU also has an opportunity to provide space for the arts. There is currently no place on the Klamath Falls campus where students can gather for artistic endeavors such as playing music, painting, or taking dance or theater classes. The CU is an ideal location to provide space for these types of activities.

Exhibit Space — Student and Community Interaction

With its focus on student services, the CU is an optimal building to house an art gallery or similar securable exhibit space to display regional or student art, or any exhibition of interest. It would serve as another feature to draw students or even community members to the space and increase University interaction.

Appeal to the Students of Today and Tomorrow

The existing CU finishes and furniture are dated. The last finish upgrades were made 20 years ago. Interior design should be upgraded to appeal to the sensibilities of Gen Z. The lighting is mostly fluorescent and should be upgraded to LED for both aesthetic and energy-efficiency improvements.

Conference Rooms

An additional issue with the CU is the configuration of conference rooms. The building has six conference rooms, and each is an odd shape with unusable corners. The sound isolation between conference rooms and circulation space is inadequate, with noise from the lounges creating audible distractions during meetings in the conference rooms. The auditorium has no accessible route from the entry to the stage.

It is recommended that the conference rooms be reconfigured in more usable shapes, with more smaller rooms, and with large spaces retained for use in banquets. More usable rooms could lead to more use by outside groups, such as the Audubon Society's Winter Wings Festival.

Bookstore

Of further note in the College Union is the campus bookstore; it is hidden away on the lower level of the CU behind the Bistro, a casual eatery. The cardinal rule for increasing retail sales is exposure. Retail stores need exterior street frontage. Passersby may be reminded that they need something, or they may see something new in the shop window that attracts them.

It is recommended that the bookstore be moved to the ground floor exterior adjacent to the sidewalk, and ideally be given a separate, direct entry. This would place it on a direct route from the parking lot to the athletic center. Spectators arriving for games would then walk past the store and perhaps be enticed to buy Owl merchandise on their way to the game.

Recommendation Summary

The relocation of academically related student services to a central, co-located space would allow the College Union to remain focused on student services, but with a concentration on student services related to recreation and personal growth, which are critical features of a residential university campus.

A College Union renovation would appeal to the sensibilities of students today and tomorrow, as well as allow spaces to have a greater draw to students and community members, increasing overall University interaction amongst its key stakeholders. A renovation also supports efficient use of space, maximizing use of available space while also contributing to a heightened student and visitor experience.

Bookstore retail space would also be improved as a result of a CU renovation, supporting University exposure and sales activity.

Recommendation: Provide an Outdoor Elevator to Connect the Upper and Lower Campus

The campus was originally designed with flat terraces separated by slopes of varying heights. Buildings were placed on the flat terraces. Over time, some buildings — Purvine, the College Union (CU), and Center for Excellence in Engineering and Technology (CEET) — were placed straddling terraces and using interior elevators. At the Athletics Building, an interior elevator connects to a tunnel to the terrace below, where the LRC is located. Currently this elevator is the only way that a wheelchair user can get from the upper terraces of campus to any of the academic buildings at the lower terraces. When the Athletics Building is closed, the lower part of campus is not accessible.

It is recommended that a new, freestanding elevator be placed near the College Union to take people from that level down to the level of the fountain and the rest of the campus. Accessibility would be open at all hours 24/7 and the Athletics building would no longer be the only means of access.

The elevator can also be designed as a focal point since it is on the main path from the College Union to CEET. Walking from CEET to the CU, this would be highly visible as an end point for this path.

Outdoor Elevator

Recommendation Summary

Provide a freestanding, all-weather elevator to connect upper and lower campus areas and improve accessibility.

Recommendation: Large Geothermal Power Plant — Repair and Refresh

Large Geothermal Power Plant

A forensic engineering assessment made as part of this study indicates that the large geothermal power plant, which has been inactive for years, has potential to become operational, with further financial viability analysis needed in order to determine if the plant can be made operable without extraordinary investment. For the full report, please see Appendix 11.3 *Technical Examination of Geothermal Electrical Power Generation Plant* — EDT Forensic Engineering and Consulting.

It is recommended a specialty contractor be engaged to repair components that need repair, install components that were never installed, and finish the wiring and controls. Once operating, the plant has the potential to produce power that may be valued up to about $500,000 annually, based on current estimates in 2023 dollars. The University may also wish to consider additional, potential business models for financing and risk sharing of repair and refresh of the large geothermal power plant along with upstart and ongoing plant operations.

As part of the recommended repair and refresh, the facility should be highlighted with an architectural upgrade,
reflecting its importance to the University, in terms of sustainability and Oregon Tech's renewable programs.

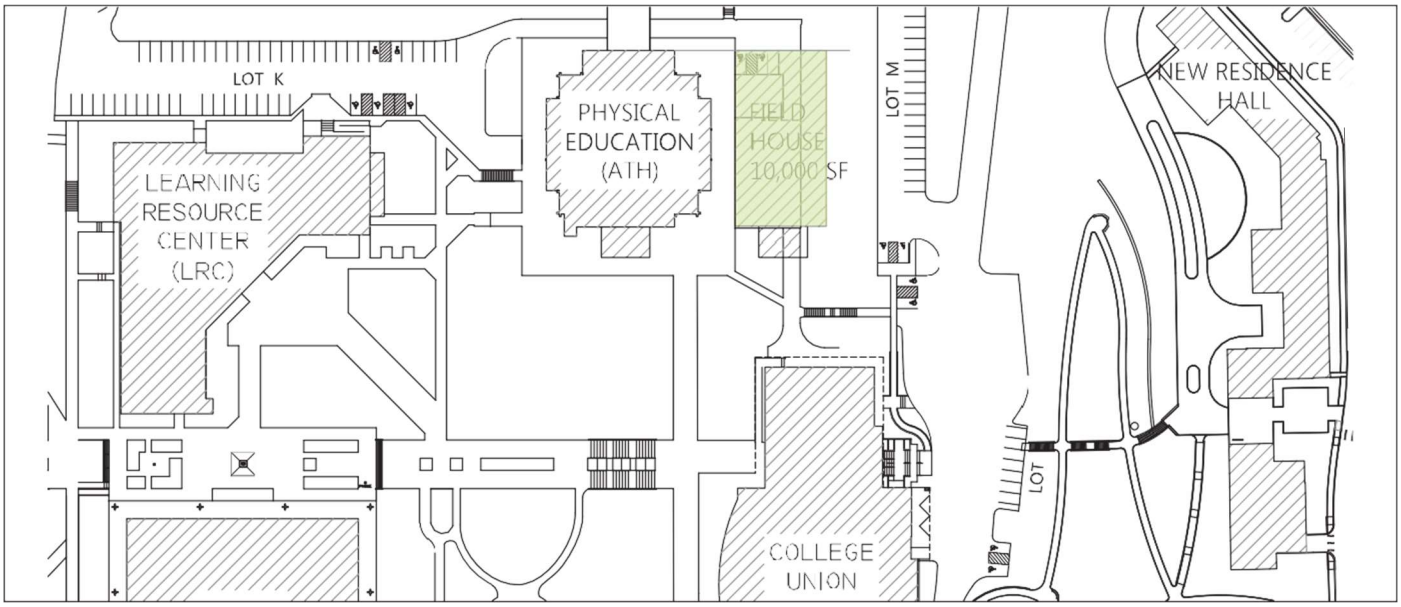
A small portion of the repair cost could go to simple but upscale fencing, building envelope upgrades, and a visitor viewing and interpretive station that would improve the facility's presence. Of note, the large geothermal power plant sits on an axis at the end of Campus Drive and could be seen as a landmark, if improved.

Recommendation Summary

Repair the currently nonfunctional geothermal power plant to generate a sustainable source of power for the University.

Recommendation: Provide a Field House Adjacent to the Athletics Building

In the climate of Klamath Falls, a field house would extend the seasons for comfortable student athlete practices and workouts. There is space adjacent to the Athletics building now occupied by an outdoor asphalt basketball court which could accommodate a field house up to 15,000 SF in area. This would be conditioned space and would rely on the adjacent Athletics building for restrooms and locker rooms. The fieldhouse could be constructed using a common, inexpensive approach such as an inflatable structure or pre-engineered metal building.



Site Plan

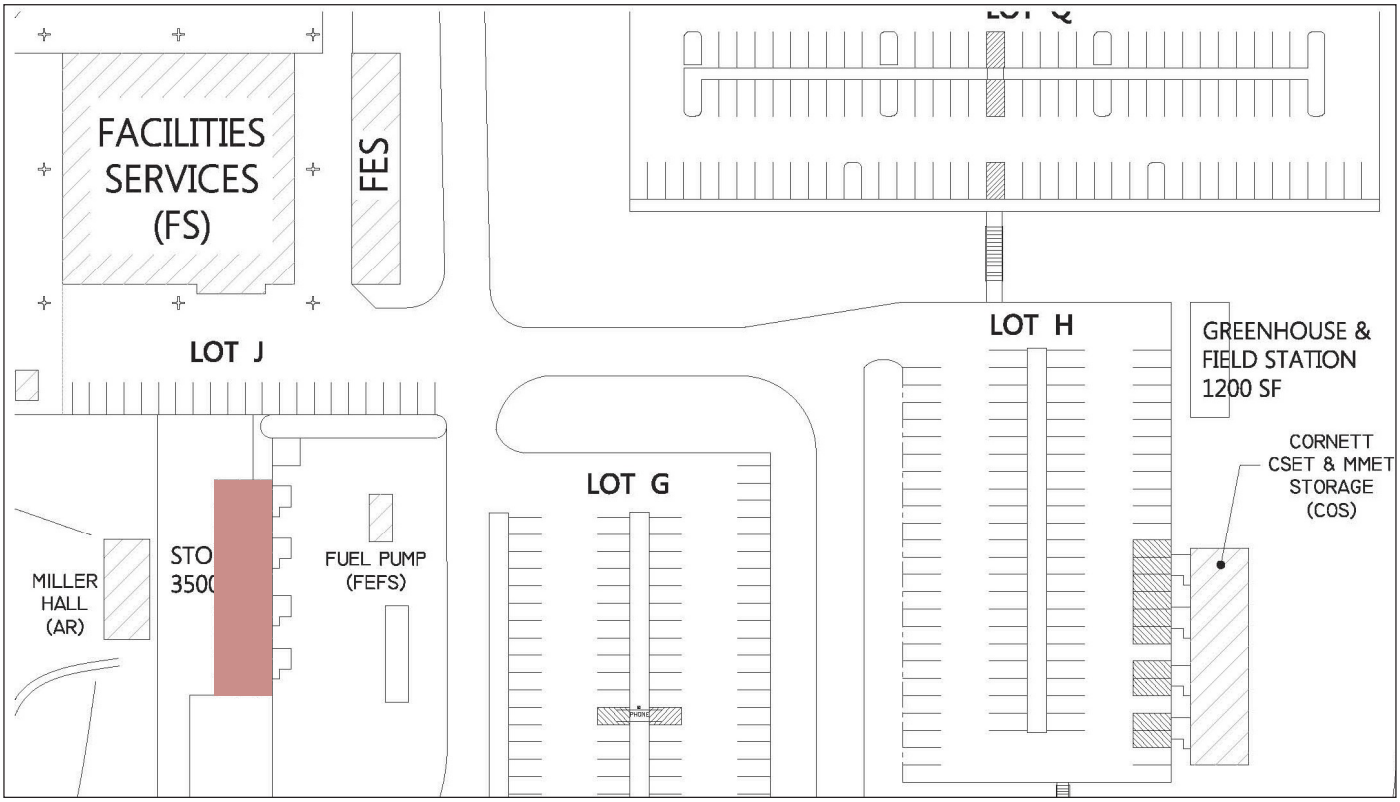
Conceptual rendering shown using a typical pre-engineered metal building

Recommendation Summary

Construct a new field house for athletics to protect student athletes from harsh weather and extend the seasons
for comfortable student athlete practices and workouts.

Recommendation: Provide a New Storage Building for Facilities

Facilities Management and Plant Services need additional storage. A 3,500 SF pre-engineered metal building similar to one they already use would be adequate to support their needs. It is recommended that this building be located near the Facilities fuel pumps.



Site Plan

Recommendation Summary

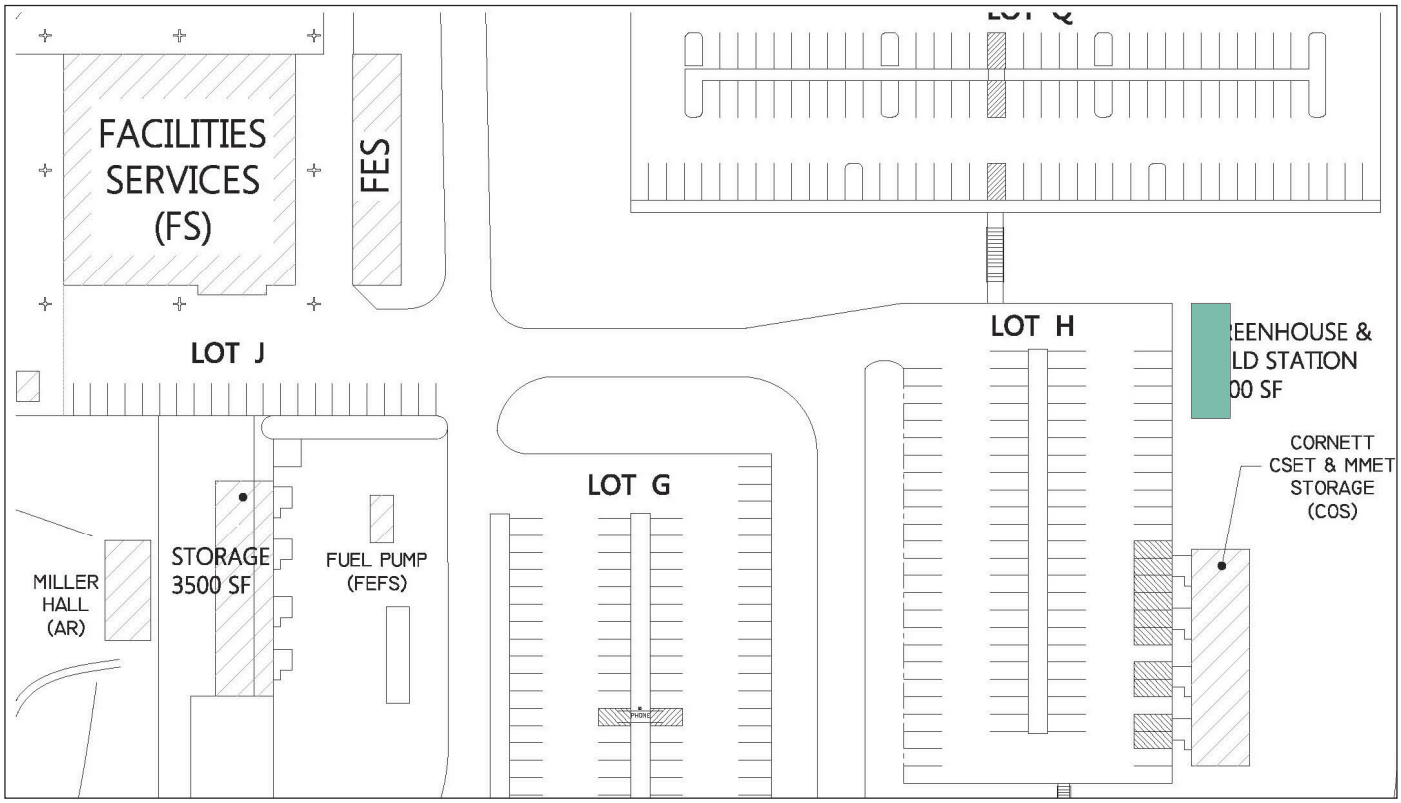
New storage building for Facilities Management.

Recommendation: Provide New Greenhouse and Field Station

The newly established Center for Advancing Interdisciplinary Research on the Environment and Health (AIRE Center) is in need of a field station to maintain outdoor-related tools, clothes, and equipment, and to serve as a place for students to assemble before going on a classroom field trip. The field station needs nearby vehicle access.

Additionally, the Oregon Renewable Energy Center (OREC) has a Department of Energy grant to demonstrate PVs integrated into a greenhouse. Like the AIRE Center, OREC needs a place to locate its demonstration greenhouse. The demonstration greenhouse should be about 36 or 40 feet long on a flat site with public exposure. It will need topsoil, truck access, a location convenient to engineering classes, water, power, and data.

It is recommended that these two facilities be combined, due to their common need of vehicle access, water, power, and data. Co-location would also support other program synergies that could develop. An optimal location is the flat site north of Parking Lot G, near the Facilities building.



Recommendation Summary

Provide a new field station for the new environmental program, with a new greenhouse for research grant.

Recommendation: Provide New Housing at Portland-Metro Campus

Most of the stakeholders interviewed who are familiar with the Portland-Metro Campus related that housing is a severe problem. The available housing is too expensive or too far away from campus.

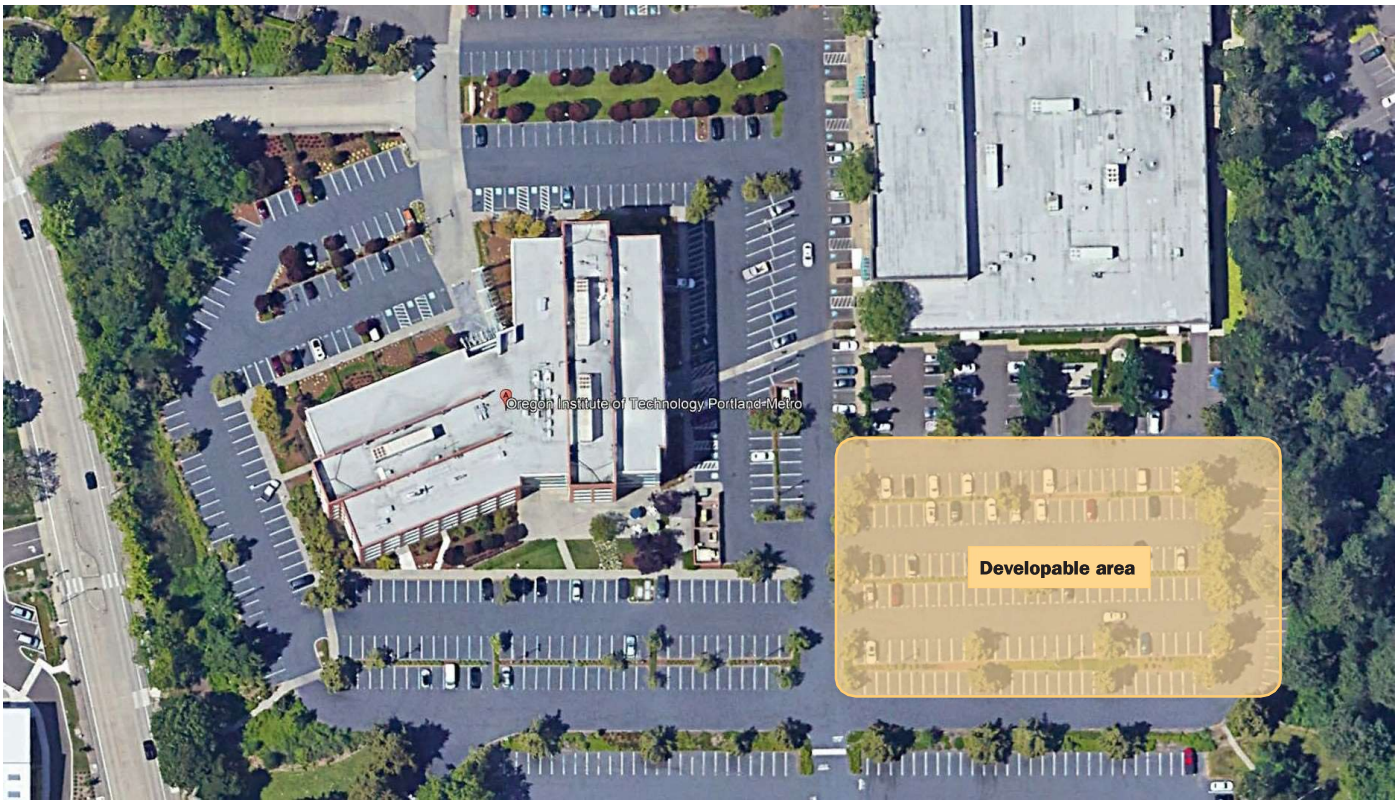
Recent regulatory changes now allow Oregon Tech to build on existing parking lots. Discussions with the City of Wilsonville Community Development Department have confirmed this, and they are interested in helping Oregon Tech develop the property.

The current Metro Campus student demographic has different characteristics than those on the Klamath Falls Campus. Metro students live in apartments or houses, as opposed to dormitories. Some have families. Many attend evening classes. Given that, it may make sense to develop market-rate apartments on Metro Campus land that is now used for parking, with preference given to Tech students.

Apartments could be developed with a real estate developer in a public-private partnership, with Oregon Tech providing the land and potential tenants, and the developer providing financing and construction. As a private apartment project, this arrangement could reduce the effort for Residence Life in managing a remote location.

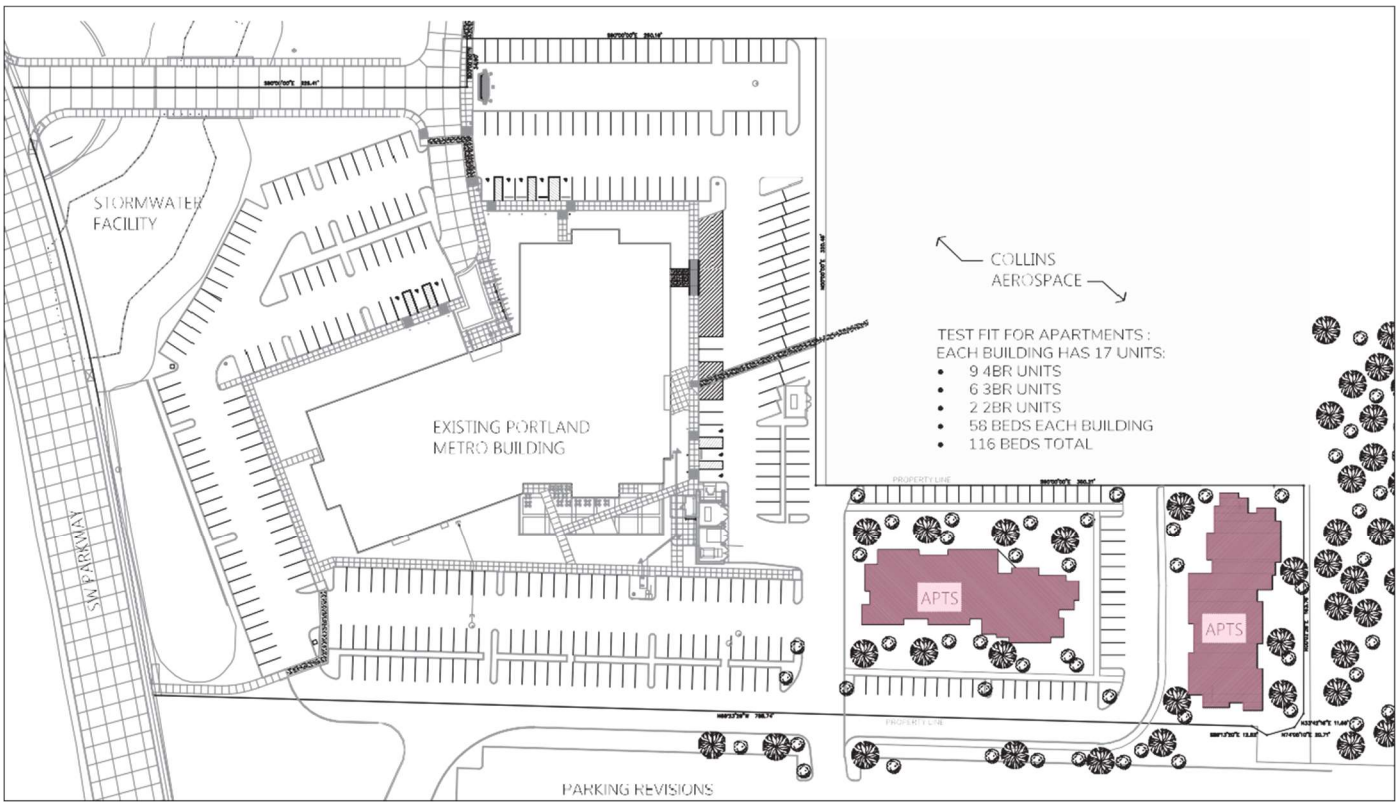
A portion of the property, shown below, has been identified as having potential for apartment use. This area is located on parking which is the farthest from the building and is the closest to the green space and walking trails to the east.

It should be noted that no parking in this entire business park is limited. Employees and visitors have no assigned parking, and anyone can park anywhere throughout the site. In addition, since the pandemic, the load on the existing parking infrastructure has been greatly reduced. Many employees of the surrounding tech firms now work at home several days a week.



Potential location on the Metro Campus for apartments

The diagram below illustrates a test fit of apartment buildings on the site by taking a copy of the smallest building in the Sustainable Village on the Klamath Falls campus and duplicating it on the Portland-Metro Campus. This building houses 58 students. The mix of unit sizes would have to be studied for the local market and Portland- Metro student needs, but on a preliminary basis, two copies of this building could fit on the site, accommodating 116 students.



Test fit of apartment buildings on the site

It is recommended that other configurations be studied as well. It may be that one larger building is more efficient or economical, or that unit sizes should be smaller for the target market. Other programmatic features should also be considered. Stakeholders have suggested that the apartments could also serve to house faculty, or even visiting staff from industry who are on short-term assignment to one of the nearby tech firms, or elsewhere in the Portland area. Another desirable feature might be to include a coffee shop, a lunch-oriented restaurant, or a convenience store. None of these are within walking distance of area tech firms right now and there may be a good market for them.

Recommendation Summary

Develop unused parking area on the Portland-Metro campus into apartment-style housing. This housing would fill a need for market-rate housing near the campus and would serve individual students, students with families, faculty members, and visiting instructors with ground floor market café.

Recommendation: Refresh Residence Hall at Klamath Falls Campus

The original residence hall at the Klamath Falls campus is dated, but still serviceable. The current plan is to keep it available after the new residence hall is completed. However, the new residence hall will be a substantial improvement. It is recommended that upgrades to the old residence hall be considered in order to provide incentive and parity for students living there.

One of the stakeholder comments often expressed in interviews was that the overall campus lacked color. Most of the newer buildings have exteriors in shades of gray, including CEET, the Sustainable Village, and the recent upgrades to Snell and the Athletics Building.

A solution to both issues is to paint the exposed concrete of the original residence hall. This refresh, potentially coupled with an interior finishes refresh, could improve the image of the building and make the community view it in a different light.

Below are possible color options for consideration.

Exterior paint color options for the original residence hall

Some of these options could use Oregon Tech's brand colors. A new and bold paint scheme could rejuvenate the building and make it more attractive to students. It might be coupled with modest interior upgrades or pricing incentives.

Recommendation Summary

Refresh visual aspects of the original residence hall to improve morale for students living there, as well as upgrade greater campus morale and sense of place.

Recommendation: Develop Apartments and Academic Buildings West of Industrial Drive

Stakeholder interview comments mentioned the lack of apartments close to the Klamath Falls campus, the lack of apartments in general and their cost, and low quality. The lack of retail opportunities near campus was also noted. There are no places within walking distance for students to buy toiletries, for example, or stock up on food for their kitchens in the Sustainable Village. However, any added new retail would not be successful without first building a critical mass of residential development.

One opportunity is to develop market-rate townhouse apartments on land west of the campus ring road. During their life span, these apartments would generate income for Oregon Tech, provide housing for students, staff, faculty and the community in general, and help provide a critical mass for retail development. More residents will help retail on Campus Drive, between the campus and Highway 97.

Conceptual rendering of apartments (lower right) and industrial facilities (lower left), with ravine in between developed into park land

The rendering above shows apartments or townhouses located south of the ravine on the knoll at Dan O'Brien Way. This is the southern side of the property, west of the ring road. The land to the north of the ravine would have academic or industrial collaborative facilities, sited so as to preserve the view from CEET. The existing ravine could be developed as park land. It already supports trees and shrubs and seems to have a year-round water course, derived from a spring.

Recommendation Summary

Increase development within the campus area by developing market-rate apartments south of the ravine and industry-academic collaboration spaces north of the ravine. This increased development would address local housing needs as well as build critical mass for new retail to support the campus community.

Recommendation: Develop an Event Center on Campus Drive

Oregon Tech currently has limited facilities to host conferences and events. A multipurpose event center could provide venues for conferences that Oregon Tech cannot now host due to lack of facilities. Other annual events such as the Winter Wings Festival are hosted now but, based on last year's attendance, there soon may not be enough space to host them again.

This lack of facilities affects the whole Klamath Basin region in southern Oregon. A preliminary review shows that the largest venue for a banquet type-event in the area is over 10 miles from town at the Running Y Resort. They can host 240 people in a banquet configuration. A new event center could have potential as a partnership between Oregon Tech and other entities, such as local economic development agencies, the City, and/or County. As an example, a partnership could develop this with land, utilities, and facility management provided by Oregon Tech, and financing split between several organizations.

The event center depicted below is 13,500 SF and can seat 320 people in a banquet configuration or 700 people in a lecture/theater type arrangement. It would include a catering kitchen. Placed at the terminus of Campus Drive, which is the high point of the road, it would have an outdoor patio with an appealing view of the campus below and Klamath Lake beyond. This rendering also shows an upgraded geothermal power plant to the right.

Conceptual rendering of new event center at terminus of Campus Drive.

Recommendation Summary

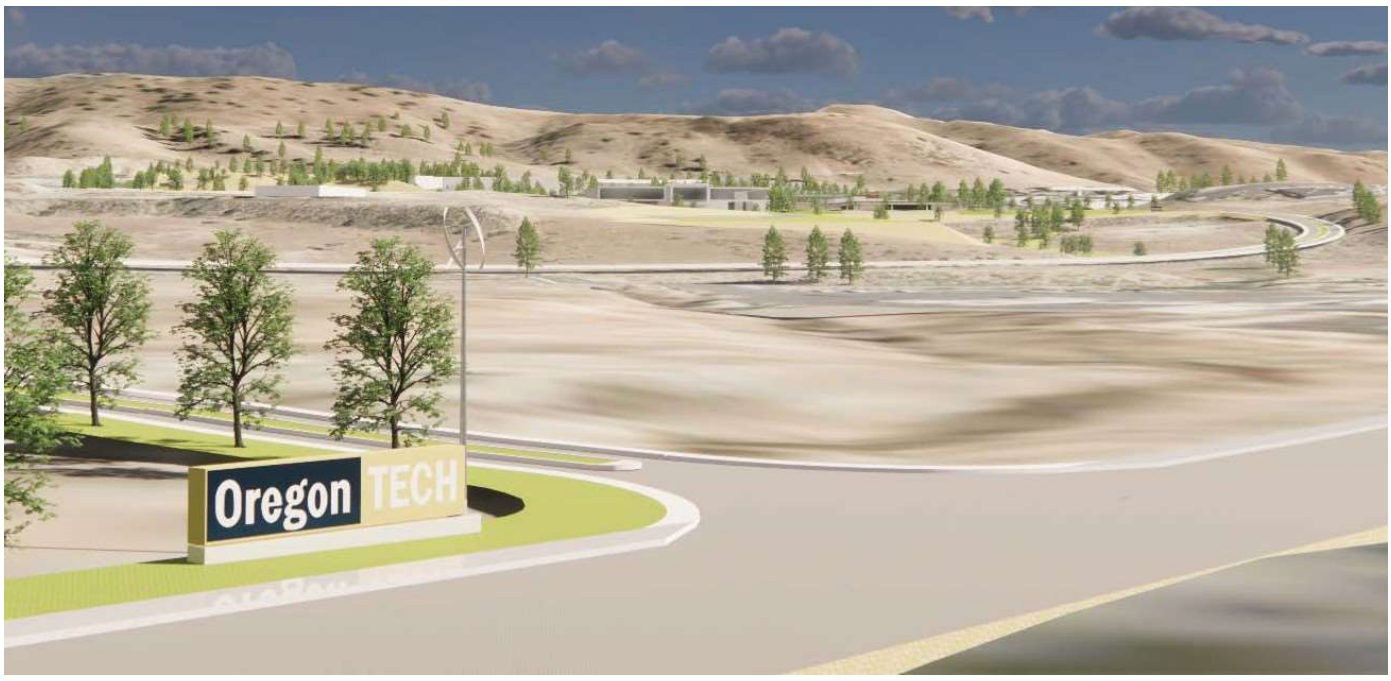
Develop an event center to provide campus facilities to host conferences and events, as well as serve the greater region in collaboration with regional stakeholders.

Recommendation: Campus Entries and Signage

The Klamath Falls campus will have a greater presence with signage that denotes where the campus is and how to get there. On Highway 97, a potentially major route to the Oregon Tech campus, there is no signage at Dan O'Brien Way to indicate the campus is on that route. This creates an underwhelming first impression for visitors and potential students or faculty.

View of Dan O'Brien Way from Highway 97, showing no signage to indicate the presence of Oregon Tech

A series of monument signs leading to the campus and signifying the campus would greatly increase the presence of the University. It is recommended these signs use the Oregon Tech marketing graphics and feature a symbolic and functional vertical axis wind turbine to symbolize Oregon Tech's focus on technology in general and renewable energy in particular. The concept rendering below depicts the same intersection with a monument sign.



Concept rendering of view of Dan O'Brien Way from Highway 97 with added monument sign

Additional monument signage should be placed at the corner of Dan O'Brien Way and Industrial Park Drive, and at the intersection of Campus Drive with Campus Circle, in a sequence marking a route from Highway 97 to the center of campus. Below is a view at Industrial Park Drive, with CEET in the background and the soccer field in the foreground behind the sign.

Conceptual view of Industrial Park Drive from Dan O'Brien Way with added monument sign

Between signs, a series of additional vertical axis wind turbines would create both a sequence of arrival and a demarcation of the campus boundary. The motion of the blades creates additional visual interest that static signs do not have.

Conceptual view of wind turbines placed to demarcate campus boundary

At the intersection of Campus Way and Campus Circle, another monument sign and wind turbine should mark the main entry to the campus proper. The view below shows a new academic building positioned in the current Parking Lot A, to provide a backdrop for the entry. The parking entry to Lot A would be provided to the left of the building.

Conceptual view of monument sign at intersection of Campus Drive and Campus Circle

Building and Street Names and Signage

A common observation from stakeholders has been that it is hard to find one's way around campus. There are several recommendations to help with this issue.

First, all buildings should have names prominently displayed on more than one side of the building in a typeface at least 10 inches high. The font should either match what is currently used on most buildings, such as Owens Hall, or a new font should be selected matching Oregon Tech marketing graphics standards. Naming the buildings also helps give meaning to any campus directional map signage.

Next, the major pedestrian ways should be named and street signs should be placed at the intersections. The main pedestrian ways run from:

1. The College Union to CEET,
2. The College Union to the soccer field (which also requires a name), and
3. The main entry walkway from Campus Way, which runs between Snell and the College Union and extends to the Athletics Building.

This would assist in making new directional maps more understandable. This also provides an opportunity to make signage on the pedestrian ways more decorative and linked to Oregon Tech marketing materials.

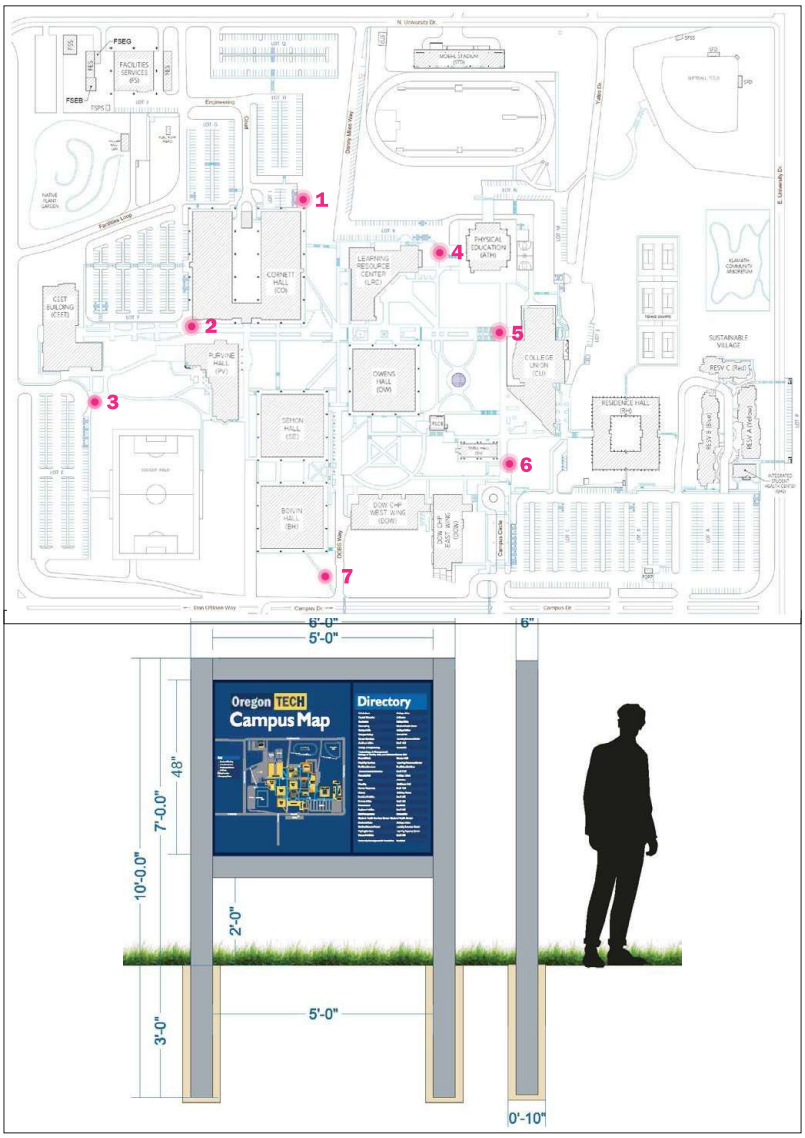
It is also recommended that standard city street signs with street names be placed where Campus Drive drops over the hill from the Sky Lakes Medical Center roundabout and intersects with Dan O'Brien Way. The City should also place similar signs at the intersection of Dan O'Brien Way and Industrial Drive.

The street from Campus Drive along the east side of Dow Center appears on some maps as Campus Circle. Place street signs at the intersection of Campus Drive which indicate this.

Another potential issue with wayfinding is that the street at the eastern edge of campus is labeled Bryant Williams Drive on Google Maps, and the street at the northern edge of campus is labeled College Way. On the map provided by Oregon Tech Parking Services, these are named North and East University Drives. To avoid confusion, the University should decide on one name for each street and place street signs at the intersections matching City standards.

It is recommended that the University place street signs at other intersections as well, such as DOBS Way, Danny Miles Way, and Yates Drive.

Furthermore, the University should place signs that name parking lots at parking lot entries — Parking Lot A, Visitors Lot, etc. — and coordinate graphics with Oregon Tech marketing.



Information and Map Signage

It is recommended that lighted directional maps be added at the proposed locations as shown.

The locations provide adequate coverage of the academic areas, although more could be added in the residential area. The proposed design makes use of Oregon Tech branding motifs and colors. Lighted directional maps and signage have been subsequently completed and were operational starting fall term 2023.

Perimeter Streets and Sidewalks

During stakeholder interviews, many commenters noted the lack of sidewalks along the perimeter streets that bound the campus, which forces pedestrians to walk in the traffic lanes. A short section of Campus Drive has a sidewalk, but this is the only place at the entire campus perimeter.

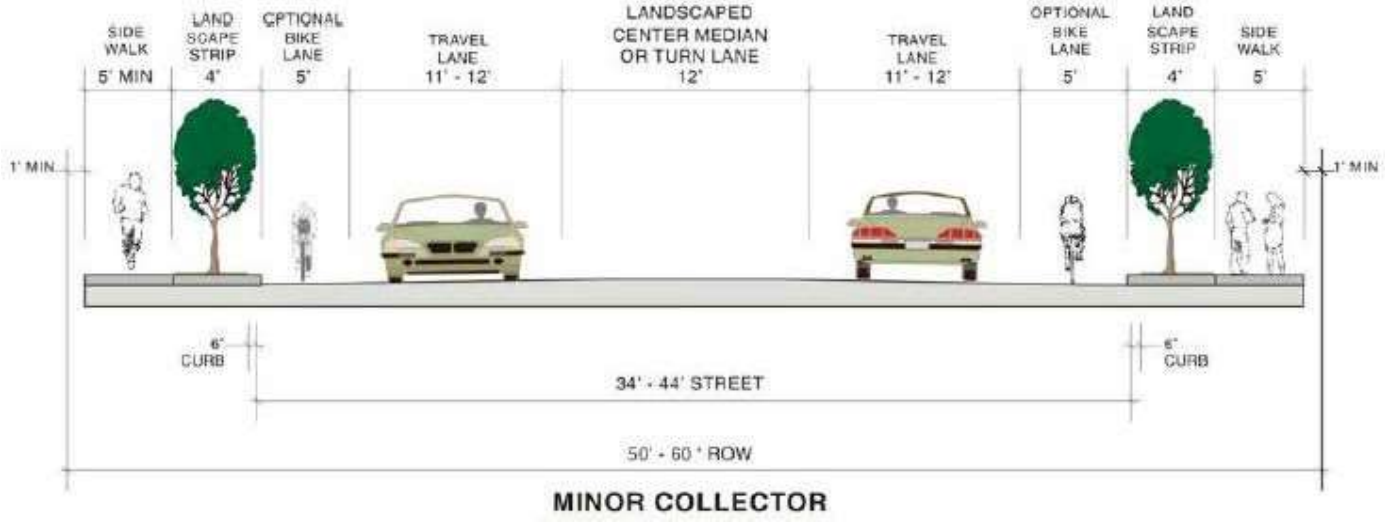
This section of Campus Drive has the only sidewalk along the campus perimeter

The perimeter streets are private streets owned by Oregon Tech, except for Industrial Park Drive and Dan O'Brien Way. However, the City has some planning jurisdiction over the area by means of the zoning code.

The perimeter streets are private streets owned by Oregon Tech, except for Industrial Park Drive and Dan O'Brien Way. However, the City has some planning jurisdiction over the area by means of the zoning code.

Perimeter Streets – Minor Traffic Collectors

According to the 2008 Klamath Falls Sub Area Master Plan, the roads which bound the campus on the east and north are considered minor traffic collectors. The Master Plan calls for these roads and sidewalks to be laid out as shown below.

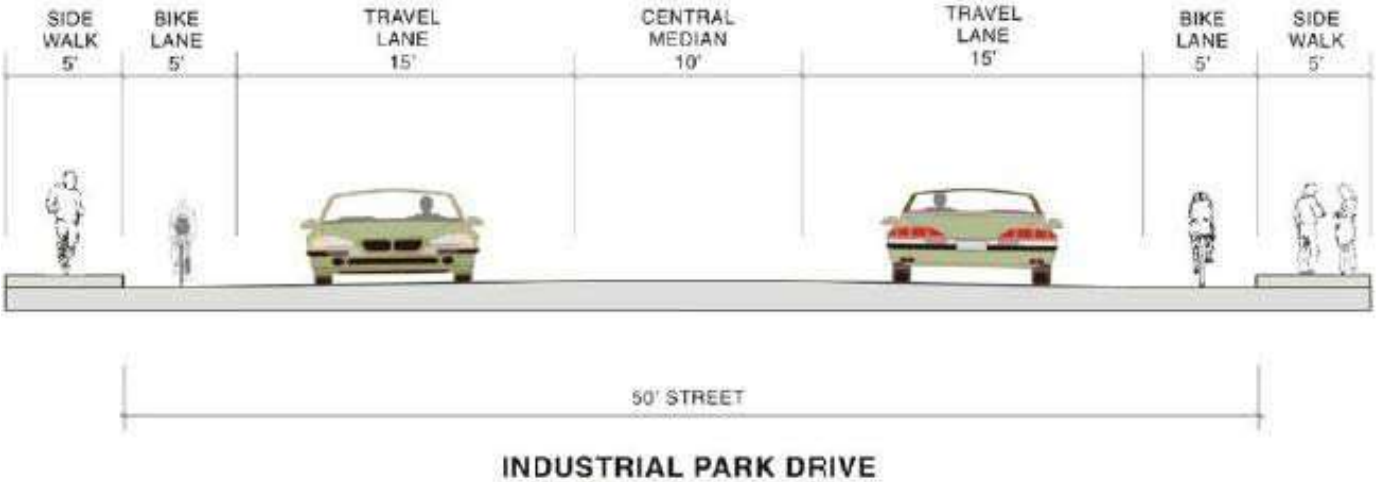


MINOR COLLECTOR

It is recommended that these roads which are considered minor traffic collectors, such as College Way, be upgraded in accordance with this design but forgoing the optional bike lanes and optional center median or turn lane. Because these roads experience very little traffic, the bike lane and center median or turn lane may not be necessary.

Industrial Park Drive

Industrial Park Drive is a city street, but the City usually requires Oregon Tech to provide upgrades in conjunction with Oregon Tech projects along its frontage. The 2008 Klamath Falls Sub Area Master Plan calls for a cross section as shown below.



INDUSTRIAL PARK DRIVE

It is recommended that Oregon Tech proceed with any construction based on this cross section.

Dan O'Brien Way

The existing cross section of Dan O'Brien Way is a simple two-lane blacktop with paved shoulders as shown.

View of Dan O'Brien Way leading up to campus

However, it transitions to a boulevard arrangement along Campus Drive at the corner of Industrial Park Drive. In this arrangement, the street has a landscaped median with two lanes for traffic in each direction.

Intersection where Dan O'Brien Way transitions to boulevard arrangement

The 2008 Klamath Falls Sub Area Master Plan calls for Dan O'Brien Way to have a cross section as shown, which is different from the existing cross section.

It is recommended that instead of the cross section shown in the Sub Area Master Plan, a cross section matching the existing Campus Drive be used (see the boulevard arrangement referenced). This would accentuate the importance of the route from Highway 97 to campus and visually integrate the two streets, connecting the University with Highway 97.

Interior Streets and Sidewalks

At the interior of the campus ring road, a common observation amongst stakeholders interviewed has been that there is an overabundance of paving on campus and a lack of landscaping.

Excessive paving outside of Cornett Hall

For example, there is an overabundance of concrete at the intersection of walks from the LRC and the main walk from the CU to CEET. It is recommended that the sidewalk just south of Cornett Hall be established as the main walk. The adjacent, parallel walk and the river rock buffer to the south should be replaced with landscaping. The paved area at the intersection with LRC walks is redundant and should be largely replaced with landscaping.

A benefit to concentrating the sidewalk area is that it reduces the area required to be plowed in snow removal or
the area requiring the expense and energy use of geothermal snow melt.

Current landscaping outside of Cornett Hall

The photo shown illustrates another concern that, along with the excessive amount of paving and rock surface area, there are typically few places to sit outdoors. To address this, it is recommended that outdoor shaded seating and landscaping be provided at building entries. Students could use these seating areas to wait outdoors for their next class or as a place to take a break. These spaces work best when configured as outdoor "rooms," bounded by landscaping and other physical features like planter walls.

When adding landscaping, it should be professionally designed, with an emphasis on shrubs, groundcovers, and trees because they require less irrigation and maintenance than lawns. A list of potential plant types that meet these criteria is contained in Appendix 11.5 *Landscaping*.

Recommendation Summary

Develop visual cues to identify Tech's presence and sense of place.

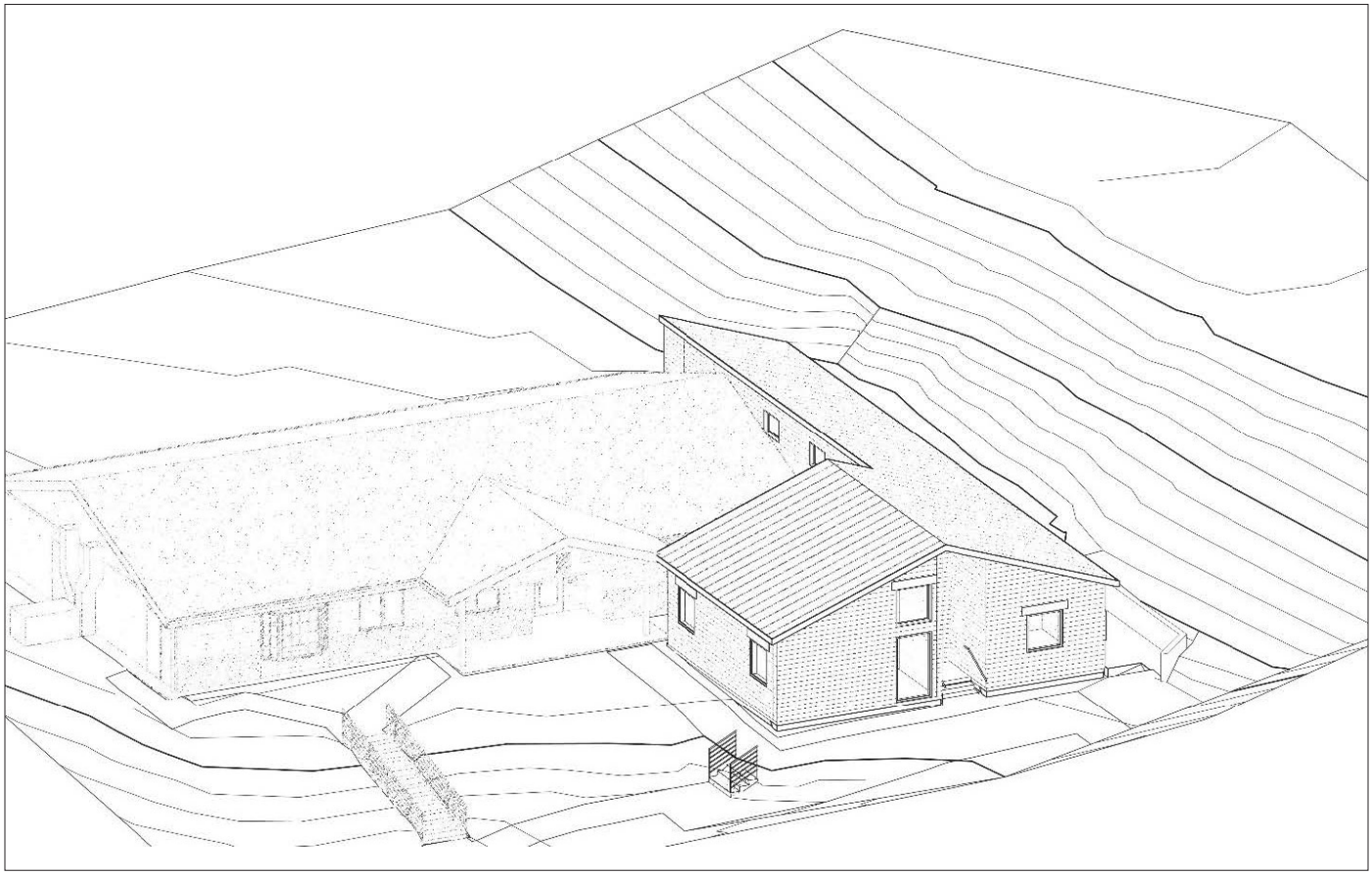
Recommendation: Expand Integrated Student Health Center

The Integrated Student Health Center (ISHC) is currently located near the Sustainable Village in a small building which was originally built as a childcare center. The building is not large enough to meet the needs of the ISHC, which is in critical need of expanded mental health counseling space. Mental health counseling, in addition to being of general health benefit, also plays a role in student retention.

In addition, the new residence hall may spur an increase in the student population, which would increase the demand for all health services, including counseling.

Previously, a plan was developed to expand the ISHC building by adding six confidential counseling offices and a conference room for group sessions. This plan included revamping the HVAC system, as the existing system is unable to meet basic comfort conditions in hot weather. The project was bid but was over budget, and only the HVAC renovation work has since been completed. It is recommended that the existing plans be revised and re- bid, and the project completed.

Recommendation Summary Expand the student health center.



Proposed addition to the Integrated Student Health Center

Recommendation: Outdoor Amphitheater

The lawn space between Dow, Owens, Semon, and Snell lacks visual coherence and contains sidewalks running in different directions. However, the plot has an existing bowl shape, which could be regraded to form an outdoor amphitheater.

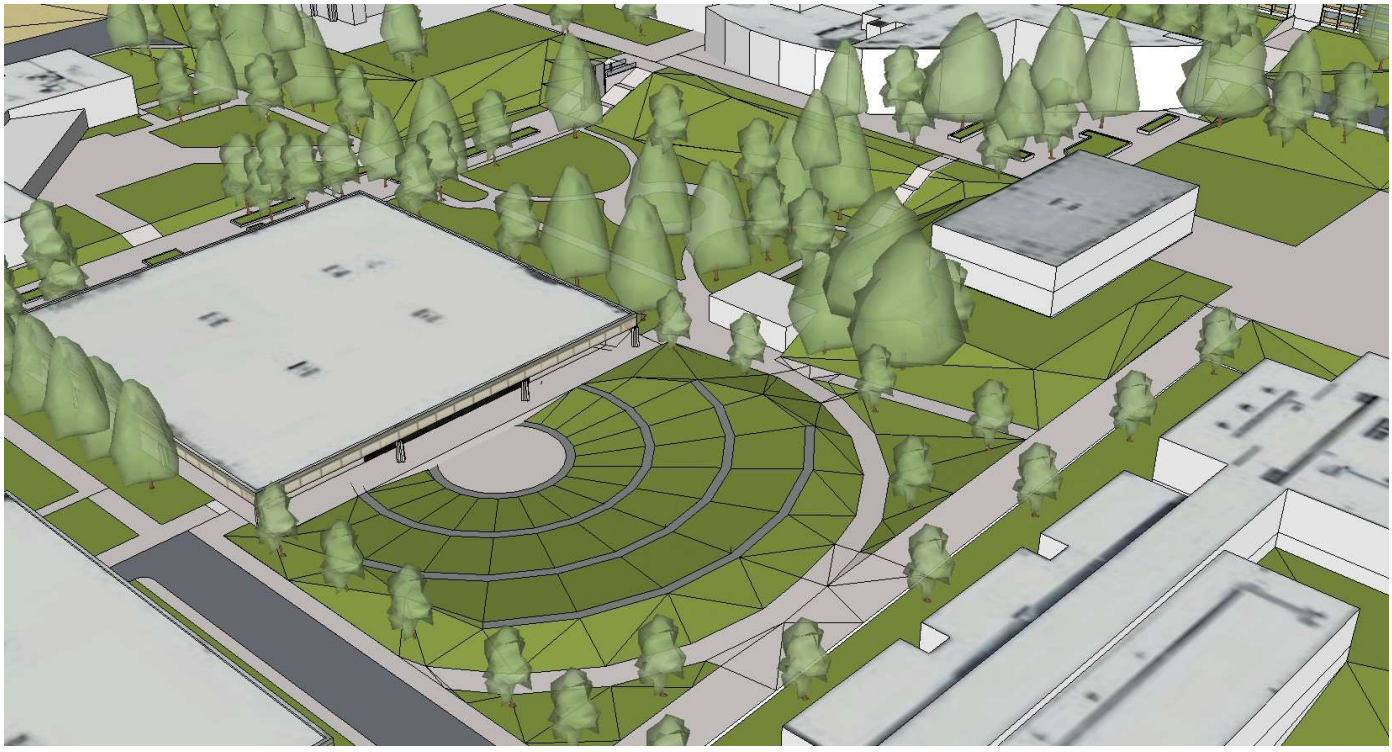
During interviews, several stakeholders mentioned this as a desirable action. The Outdoor Amphitheater could be the location for the Student Life Music Garden event, or other music and theater performances.

Existing lawn between Dow, Owens, Semon, and Snell

It is recommended that detailed design be done to establish the best arrangement, working with the existing sculpture, the slope, and solar orientation. A concept is shown below.

<u>Recommendation Summary</u>

Regrade and landscape existing lawn to create an outdoor amphitheater.



Conceptual rendering of new amphitheater

Recommendation: New Access Road

A new access road can be developed to provide more direct access to the western part of the campus from Dan O'Brien Way. This will also provide access to university-industrial collaboration facilities and separate them from the proposed residential development across the stream and natural area to the south.

New Access Road

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5.0 Facilities Condition Assessment

Introduction

Summary — Building Condition Assessments

Summary — Klamath Falls Campus Infrastructure Assessment

Introduction

Facilities Assessments and Condition Indices

As part of the master plan work effort, facilities condition assessments were made of the campus infrastructure and all the older buildings which have not been renovated within the last 10 years.

Campus infrastructure included:

1. Water supply
2. Sanitary Sewer
3. Stormwater systems
4. Parking Lots
5. Roads
6. Sidewalks, exterior stairs and ramps
7. Exterior sports facilities
8. Geothermal heating system
9. Central chilled water system
10. Campus electrical distribution system

Buildings included:

1. College Union
2. Snell Hall
3. Athletics Building
4. Learning Resource Center
5. Purvine Hall
6. Semon Hall
7. Facilities Building
8. Portland-Metro Building

Summary — Building Condition Assessments

Assessments were carried out according to ASTM E2018 – Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process. This standard is focused on the physical condition of the property and the generally accepted useful life of various components of buildings or infrastructure. Features
of the property which do not meet current building codes are not considered in the assessment. None of the buildings, for example, meet current seismic resistance codes, and some have isolated conditions that do not meet current requirements for accessibility. These have not been listed in the assessments and this is in accordance with the ASTM standard.

Assessments identified components that are likely to need repair or replacement in the next two years, the next 10 years, or the next 15 years (or in other words, by 2025, by 2033 and by 2038). Costs for the repair or replacement were estimated and expressed in 2023 dollars.

A facilities condition index or FCI was developed for each building. This is the ratio of the total expected repair and replacement cost divided by the cost of replacing the entire building with a new structure. It can be expressed as a decimal index or a percentage. Comparing these can help to prioritize which structures should get funding for repairs and capital replacement. This is not typically done for infrastructure elements because it is not practical to even consider replacing an entire infrastructure system. With buildings, however, it is possible that so much money needs to be spent on repairing the building that it makes sense to demolish it and build a new one.

FCI ratios are typically grouped into categories of Good, Fair, Poor, and Critical as described on the next page.

The Facilities Condition Index — Typical Groupings and Implications

GOOD (<.05)	Risk of Unplanned Component Failure	Unplanned component failure highly unlikely. Proper and predictable maintenance and capital planning will be possible.
	Impact on Operations	Operational costs, including maintenance and utilities, will be highly predictable.
	Impact on Users	Facility will provide a clean and functional environment.
FAIR (.05 - .10)	Risk of Unplanned Component Failure	Unplanned component failure is somewhat unlikely. Proper and predictable maintenance and capital planning will be possible with a lesser degree of precision.
	Impact on Operations	There may be some unpredictability in operational costs due to limited component failure.
	Impact on Users	The facility will meet most operational needs with only minor complaints from users. Some signs of wear may be evident.
POOR (.10 - .30)	Risk of Unplanned Component Failure	Unplanned component failure is likely, possibly requiring facility shutdown during emergency repairs. Component failure may cause collateral damage to other components, increasing the amount of unbudgeted repair costs.
	Impact on Operations	Unplanned facility shutdowns are possible, resulting in loss of use and revenue. Operational costs may be very high if components are jury-rigged to remain operational. Utility costs may be high. Maintenance costs responding to user complaints will be high.
	Impact on Users	Loss of use during shut down. Discomfort and lower productivity from components not performing effectively. Users may experience adverse health effects and lost work days due to ineffective ventilation or other faulty components. Significant comfort complaints by users and maintenance staff time responding to them.
CRITICAL (>.30)	Risk of Unplanned Component Failure	Unplanned component failure will definitely occur. Shutdowns will occur. Collateral damage to other components will result in unbudgeted costs that could have been avoided.
	Impact on Operations	Emergency repair costs and staff relocation costs will impact budgets. Loss of facility use and revenue will do same. Operational costs will be high. Maintenance costs responding to user complaints will be high.
	Impact on Users	Loss of use during shut down. Discomfort and lower productivity from components not performing effectively. Users will most likely experience adverse health effects and lost work days due to ineffective ventilation or other faulty components. Significant comfort complaints by users and maintenance staff time responding to them. Departments will lobby strongly for relocation.

Summary — Klamath Falls Campus Infrastructure Assessment

The results are tabulated below and show the Learning Resource Center, Purvine, and Semon all in the Poor category, with the LRC needing the most work, and Semon the worst, although still well within the Poor category.

The full facilities assessment reports are provided in Appendix 11.4 *Facility Assessments and Condition Indices*.

Campus Total Comparative Costs and FCI: 15 Year Expected Building Repair Replacement Costs

Building	Event Type	Cost In 2023 Dollars Year 2 2023-2025	Year 10 2026-2033	Year 15 2034-2038	Total 2023-2038	Combined Total Repair & Replacement (a)	Building Replacement Cost (b)	Facility Condition Index (a/b)
LRC	Repair	$105,000	$150,000	-	$255,000	-	-	-
	Replacement	$5,555,000	$74,000	-	$5,629,000	-	-	-
	Total	$5,660,000	$224,000	$0	$5,884,000	$5,884,000	$31,584,000	0.19
Purvine	Repair	$1,025,000	$15,000	$15,000	$1,055,000	-	-	-
	Replacement	$2,240,520	$340,000	-	$2,580,520	-	-	-
	Total	$3,265,520	$355,000	$15,000	$3,635,520	$3,635,520	$27,882,000	0.13
Semon	Repair	$60,000	-	-	$60,000	-	-	-
	Replacement	$2,742,320	$25,000	-	$2,767,320	-	-	-
	Total	$2,802,320	$25,000	$0	$2,827,320	$2,827,320	$26,712,000	0.11
Facilities	Repair	$15,000	-	-	$15,000	-	-	-
	Replacement	$858,000	-	$5,000	$863,000	-	-	-
	Total	$873,000	$0	$5,000	$878,000	$878,000	$11,950,000	0.07
College Union	Repair	$10,000	$25,000	$10,000	$45,000	-	-	-
	Replacement	$1,695,000	$25,000	$157,000	$1,877,000	-	-	-
	Total	$1,705,000	$50,000	$167,000	$1,922,000	$1,922,000	$51,380,000	0.04
Portland-Metro	Repair	$131,000	$455,000	-	$586,000	-	-	-
	Replacement	$2,855,000	$47,000	$80,000	$2,982,000	-	-	-
	Total	$2,986,000	$502,000	$80,000	$3,568,000	$3,568,000	$83,257,200	0.04
Snell	Repair	$60,000	-	-	$60,000	-	-	-
	Replacement	$227,000	$105,000	$100,000	$432,000	-	-	-
	Total	$287,000	$105,000	$100,000	$492,000	$492,000	$14,625,000	0.03
Athletics	Repair	$15,000	-	-	$15,000	-	-	-
	Replacement	$937,000	-	-	$937,000	-	-	-
	Total	$952,000	$0	$0	$952,000	$952,000	$31,056,000	0.03
Civil Infrastructure	Repair	$93,500	$526,000	-	$619,500	-	-	-
	Replacement	$3,270,000	$6,625,000	$75,000	$9,970,000	-	-	-
	Total	$3,363,500	$7,151,000	$75,000	$10,589,500	$10,589,500	$150,000,000	0.07
Geothermal, Electrical, & Chilled Water Infrastructure	Repair	$1,088,500	$135,000	$20,000	$1,243,500	-	-	-
	Replacement	$4,625,000	$2,750,000	$10,000	$7,385,000	-	-	-
	Total	$5,713,500	$2,885,000	$30,000	$8,628,500	$8,628,500	$150,000,000	0.06
Totals		**$27,607,840**	**$11,297,000**	**$472,000**	**$39,376,840**	**$39,376,840**	**$345,681,000**	**0.11**

6.0 Geothermal Assessments

Heating System

Power Plants

Heating System

The Klamath Falls campus uses a system of geothermal wells and heat exchangers to provide heat and power. The heating system (the system) was assessed in 2022 and a copy of that assessment follows in Appendix 11.2 *2022 Oregon Tech Geothermal Condition Assessment* (Heating) — Fluent Engineering, Inc.

This assessment focuses on the wells and distribution system but also reviews the heat exchangers in each building. The individual building assessments also review the heat exchangers in each building.

The system also provides hot water for building heating to the MKB Crystal Terrace Retirement Community that is southeast of Sky Lakes Medical Center. The condition of distribution to Crystal Terrace was not covered in this assessment.

Power Plants

Separate from the geothermal heating system, geothermal hot water is also used to generate electricity in several organic rankine cycle turbines.

The first geothermal power plant used to general electricity was designed to provide 280 KW of power and was originally installed in the 1960s.

A second power plant, with two turbines having a total designed output of 1.75 MW, was initially constructed around 2011. The project has, however, been subject to a number of difficulties. The University is actively considering various options of how best to move forward with the second power plant.

This second power plant was given a preliminary assessment by EDT Forensic Engineering and Consulting as part of this Facilities Master Plan. The preliminary assessment found that there is nothing inherently incorrect in the design, but that the plant was never fully assembled. If some defective components are repaired, it could operate as originally intended.

The assessment of the 1.75 MW plant is also appended in Appendix 11.3 *Technical Examination of Geothermal Electrical Power Generation Plant* — EDT Forensic Engineering and Consulting.

7.0 Space Utilization

Summary

A review of space use was conducted for both the Klamath Falls and Portland-Metro locations. Spaces were categorized as:

- General Use Classrooms: these can be classic “face-forward” type, “active learning” type, or tiered amphitheater type, all seating 20 or more.
- Conference Rooms and Non-Classroom Meeting Space: these are arranged for smaller meetings around a central table, seating 20 or less.
- Teaching Labs: these are the predominant lab type in which students conduct experiments, test materials or devices, and build devices.
- Research Labs: these are focused on research sponsored by a grant, with results reported to a funding sponsor such as a manufacturer or government agency.
- Offices: these are individual offices or open office areas for administrative staff and faculty. Some universities provide office space for graduate students, although that is not the case at Oregon Tech.

Method of Analysis

Academic space use can be categorized on the one hand as classrooms with presentation equipment, seating, and perhaps group work tables, and on the other hand as labs and workshops with specialized equipment and utilities. All classrooms and labs are scheduled for use each term by the Registrar’s Office. A detailed review was made of the Registrar’s assignments of space for each course over a typical academic year. For each room scheduled by the registrar, a summary was made of the percentage of time each day that the room was in use. This was then rolled into daily and total averages for each building and weekly averages for each room.

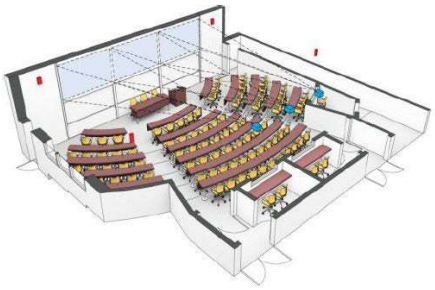
Efficient space utilization is characterized by having available rooms in use as much as possible. Room utilization percentage should ideally be 100 percent; that is, they should be in use during all available hours. Classrooms can be scheduled with this objective because they are typically set up for general use. Labs cannot be scheduled this way because they contain specialized equipment that only certain disciplines or programs would be able to use. For example, a diagnostic ultrasound imaging lab would never be scheduled for general classroom use, and it might not even have a high utilization rate among the disciplines that use it. This is because programs often may deal with that subject matter in a certain sequence, perhaps only after students in that discipline already have two years in the program, or only in the spring term. A lab cannot be expected to have a high utilization rate.

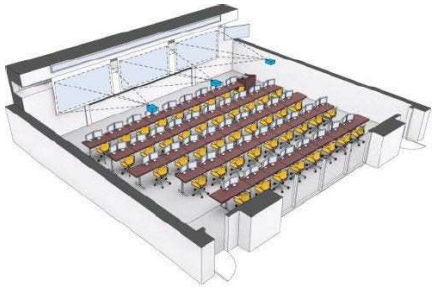
However in this review, where the Registrar has scheduled a lab for use, that information was included in the utilization analysis even though labs are not expected to have utilization rates as high as classrooms.

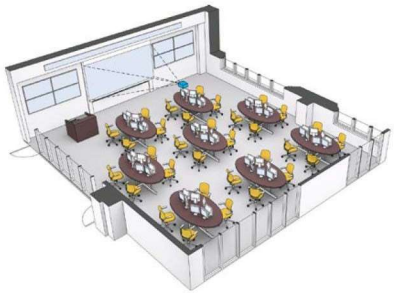
The percentage of use each day is a function of the hours in use and the maximum hours available for use. Courses are scheduled in Klamath Falls from 8am to 8pm, thus there are 12 hours per day available. At the Portland-Metro campus, since so many students work during the day, there are more evening classes and they run as late as 10 pm, so the available hours are 14 hours per day. This inherently makes the utilization appear lower at the Portland-Metro campus.

Types of Classrooms

In addition to reviewing the schedule for each room, a visual inspection was made to determine the types of classrooms available. There are three basic configurations of classrooms: sloped floors with tiered seating, flat floors with tables and chairs oriented towards a presenter (also known as “face forward”), and flat floors with tables and chairs set up for student work groups (the inverted or flipped classroom, also known as “active learning”).







Only three instances of tiered classrooms were seen on campus — one in Dow and two in Purvine. Room E237 in Dow has one of the higher utilization rates at 40 to 53 percent depending on the term and is heavily used by classes which sit for no more than an hour. Room 208 in Purvine has the highest utilization rate in the building, at 40 percent for some terms.

Most of the other classrooms which were reviewed appeared to be configured with flat floors and chairs with tables facing a presenter. Currently there is a lot of interest in active learning classrooms, and these have been a primary focus in the design of the CEET building. There are also active learning classrooms in Dow, Owens and Semon. The Dow room is one of the most commonly used in the building.

Tiered Classroom – Purvine Room 208

Typical Face Forward Classroom

Active Learning Classroom – Dow Room E242

This review included the Portland-Metro building, Dow, Owens, Semon, and Purvine. Boivin was not included since it is under renovation and, when completed, will only have one general use classroom which can be scheduled. The rest of the space will consist of labs, offices, and student workrooms. Cornett was not included because it also consists solely of labs and workshops. CEET was not included because it only became available in the fall term of 2022 and there was not yet a whole year of data for it.

Results — General Use Classrooms

The following pages chart the percentage of utilization for each room in each building over a typical academic year. It is clear that both the Klamath Falls and Portland-Metro campuses have more than adequate capacity in general use classrooms.

However, there are more issues than simple amount of space. A survey of faculty conducted by Sharon Beaudry for the Commission on College Teaching revealed that there are problems with consistency between classrooms. Some have one type of technology, and some have others. Some are in good working order, and some are not. Because of the inconsistency, an instructor may have to reorganize a course from term to term depending on the technology available in the room they are assigned.

In addition, more and more classes are moving towards an active learning pedagogy, but most classrooms are still set up in a “face forward” arrangement. This suggests that Oregon Tech may want to emphasize funding the reorganization of existing classroom space to achieve technological consistency and arrangements that encourage active learning, rather than creating additional rooms.

Purvine Utilization Rates 2019/20

Utilization Rate 2019/20 Fall Term	Percentage occupancy by room 8am to 8pm																								Daily Average
Purvine	Room Numbers																								
	104	107	110	114	119	120	125	147	153	202	203	206	208	210	211	213	220	222	223	228	237	241	248	251	
Mon	-	-	-	16%	16%	-	-	58%	-	42%	42%	38%	58%	33%	25%	25%	16%	-	66%	38%	33%	33%	25%	-	**24%**
Tues	50%	75%	25%	50%	25%	25%	-	50%	25%	-	-	8%	33%	25%	-	25%	16%	12%	-	33%	75%	25%	75%	75%	**30%**
Wed	-	-	-	16%	16%	-	-	67%	-	42%	42%	25%	42%	33%	25%	33%	16%	-	66%	25%	16%	-	25%	-	**20%**
Thu	50%	25%	50%	50%	25%	50%	-	75%	25%	-	-	8%	33%	-	-	-	16%	12%	-	38%	-	50%	25%	58%	**25%**
Fri	-	-	-	16%	16%	-	-	58%	-	58%	33%	16%	42%	33%	-	25%	16%	-	66%	25%	16%	-	-	-	**18%**
Weekly Average by Room	**20%**	**20%**	**15%**	**30%**	**20%**	**15%**	**0%**	**62%**	**10%**	**28%**	**23%**	**19%**	**42%**	**25%**	**10%**	**22%**	**16%**	**5%**	**40%**	**32%**	**28%**	**22%**	**30%**	**27%**	-
																						Building Average			**23%**

Utilization Rate 2019/20 Winter Term	Percentage occupancy by room 8am to 8pm																								Daily Average
Purvine	Room Numbers																								
	104	107	110	114	119	120	125	147	153	202	203	206	208	210	211	213	220	222	223	228	237	241	248	251	
Mon	-	-	-	25%	-	16%	-	33%	-	33%	42%	16%	25%	16%	25%	50%	25%	8%	58%	71%	8%	-	8%	-	**19%**
Tues	25%	75%	-	-	25%	50%	-	75%	-	-	8%	25%	16%	50%	33%	12%	-	12%	16%	25%	58%	25%	16%	25%	**24%**
Wed	-	-	-	25%	-	16%	-	33%	-	33%	42%	16%	25%	16%	25%	42%	25%	8%	58%	38%	8%	-	8%	-	**17%**
Thu	25%	25%	25%	25%	50%	50%	-	50%	-	16%	8%	25%	16%	50%	33%	12%	-	12%	16%	75%	50%	-	16%	25%	**25%**
Fri	-	-	-	25%	-	16%	-	25%	-	33%	42%	8%	25%	8%	-	50%	8%	8%	58%	38%	8%	-	8%	-	**15%**
Weekly Average by Room	**10%**	**20%**	**5%**	**20%**	**15%**	**30%**	**0%**	**43%**	**0%**	**23%**	**28%**	**18%**	**21%**	**28%**	**23%**	**33%**	**12%**	**10%**	**41%**	**49%**	**26%**	**5%**	**11%**	**10%**	-
																						Building Average			**20%**

Utilization Rate 2019/20 Spring Term	Percentage occupancy by room 8am to 8pm																								Daily Average
Purvine	Room Numbers																								
	104	107	110	114	119	120	125	147	153	202	203	206	208	210	211	213	220	222	223	228	237	241	248	251	
Mon	-	8%	8%	33%	16%	8%	-	16%	-	25%	42%	33%	16%	38%	12%	42%	-	8%	50%	50%	8%	-	-	8%	**18%**
Tues	-	75%	-	75%	33%	25%	25%	25%	50%	16%	-	-	16%	8%	46%	-	-	-	16%	50%	25%	75%	25%	50%	**26%**
Wed	-	-	8%	33%	8%	8%	-	16%	-	25%	16%	33%	16%	38%	12%	42%	-	8%	50%	50%	8%	-	-	16%	**16%**
Thu	25%	50%	75%	-	-	75%	25%	25%	25%	-	-	-	16%	-	46%	-	-	-	8%	75%	25%	75%	25%	50%	**26%**
Fri	-	-	-	33%	16%	8%	-	16%	-	25%	25%	16%	16%	25%	-	42%	-	8%	42%	33%	8%	-	-	8%	**13%**
Weekly Average by Room	**5%**	**27%**	**18%**	**35%**	**15%**	**25%**	**10%**	**20%**	**15%**	**18%**	**17%**	**16%**	**16%**	**22%**	**23%**	**25%**	**0%**	**5%**	**33%**	**52%**	**15%**	**30%**	**10%**	**26%**	-
																						Building Average			**20%**

Owens Utilization Rates 2021/22

Utilization Rate 2021/22 Fall Term	Fall term starting 9/29/21. Percentage occupancy by room 8am to 8pm																						Daily Average
Owens	**Room Numbers**																						
	111	112	123	130	141	142	201	202	205	206	207	208	212	213	216	217	218	219	220	222	223	224	
Mon	25%	17%	50%	58%	58%	33%	50%	42%	46%	17%	67%	50%	38%	33%	33%	33%	25%	42%	33%	75%	50%	58%	**42%**
Tues	13%	25%	50%	50%	13%	17%	8%	63%	25%	50%	38%	50%	29%	13%	25%	-	25%	8%	-	33%	25%	29%	**27%**
Wed	42%	17%	25%	33%	58%	33%	50%	42%	46%	50%	67%	25%	38%	33%	33%	33%	25%	42%	33%	75%	50%	33%	**40%**
Thu	29%	-	25%	17%	54%	58%	42%	21%	25%	13%	46%	50%	38%	21%	33%	42%	25%	8%	25%	42%	17%	38%	**30%**
Fri	8%	17%	-	25%	58%	33%	50%	33%	33%	8%	67%	25%	17%	17%	33%	42%	25%	42%	33%	50%	42%	33%	**31%**
Weekly Average by Room	**23%**	**15%**	**30%**	**37%**	**48%**	**35%**	**40%**	**40%**	**35%**	**28%**	**57%**	**40%**	**32%**	**23%**	**31%**	**30%**	**25%**	**28%**	**25%**	**55%**	**37%**	**38%**	-
																				Building Average			**34%**

Utilization Rate 2021/22 Winter Term	Winter term starting 1/3/22. Percentage occupancy by room 8am to 8pm																						Daily Average
Owens	**Room Numbers**																						
	111	112	123	130	141	142	201	202	205	206	207	208	212	213	216	217	218	219	220	222	223	224	
Mon	33%	25%	50%	58%	67%	25%	38%	42%	33%	21%	67%	33%	38%	8%	50%	33%	17%	13%	42%	63%	8%	79%	**38%**
Tues	25%	13%	38%	75%	25%	8%	29%	21%	38%	75%	-	17%	8%	50%	8%	-	33%	-	25%	25%	17%	21%	**25%**
Wed	33%	-	25%	67%	75%	25%	38%	42%	33%	46%	67%	33%	38%	8%	50%	33%	8%	-	42%	79%	8%	46%	**36%**
Thu	25%	25%	38%	75%	33%	33%	38%	21%	25%	17%	67%	-	25%	25%	8%	33%	25%	-	29%	50%	17%	21%	**29%**
Fri	33%	-	-	58%	58%	17%	25%	17%	25%	-	67%	33%	25%	8%	50%	33%	8%	-	8%	42%	8%	33%	**25%**
Weekly Average by Room	**30%**	**13%**	**30%**	**67%**	**52%**	**22%**	**34%**	**29%**	**31%**	**32%**	**54%**	**23%**	**27%**	**20%**	**33%**	**26%**	**18%**	**3%**	**29%**	**52%**	**12%**	**40%**	-
																				Building Average			**31%**

Utilization Rate 2021/22 Spring Term	Spring term starting 3/28/22. Percentage occupancy by room 8am to 8pm																						Daily Average
Owens	**Room Numbers**																						
	111	112	123	130	141	142	201	202	205	206	207	208	212	213	216	217	218	219	220	222	223	224	
Mon	8%	-	25%	58%	63%	17%	33%	50%	50%	42%	58%	25%	33%	33%	33%	50%	-	17%	17%	46%	17%	58%	**33%**
Tues	-	-	8%	17%	8%	33%	13%	21%	29%	67%	33%	58%	13%	8%	8%	8%	46%	13%	8%	25%	25%	42%	**22%**
Wed	8%	17%	17%	67%	63%	17%	25%	25%	50%	58%	58%	25%	33%	33%	33%	50%	-	17%	17%	46%	17%	33%	**32%**
Thu	25%	-	42%	42%	42%	25%	38%	13%	54%	50%	42%	50%	38%	33%	8%	50%	71%	13%	8%	58%	25%	25%	**34%**
Fri	8%	-	8%	17%	54%	17%	25%	17%	50%	-	58%	25%	33%	17%	33%	42%	-	17%	17%	58%	17%	33%	**25%**
Weekly Average by Room	**10%**	**3%**	**20%**	**40%**	**46%**	**22%**	**27%**	**25%**	**47%**	**43%**	**50%**	**37%**	**30%**	**25%**	**23%**	**40%**	**23%**	**15%**	**13%**	**47%**	**20%**	**38%**	-
																				Building Average			**29%**

Semon Utilization Rates 2021/22

Utilization Rate 2021/22 Fall Term	Fall term starting 9/29/21. Percentage occupancy by room 8am to 8pm							Daily Average
Semon	Room Numbers							
	123	142	203	204	209	210	226	
Mon	33%	8%	42%	50%	42%	-	13%	**27%**
Tues	33%	25%	16%	25%	13%	-	67%	**26%**
Wed	33%	8%	42%	50%	42%	-	25%	**29%**
Thu	25%	25%	16%	25%	29%	-	100%	**31%**
Fri	25%	8%	42%	50%	42%	-	50%	**31%**
Weekly Average by Room	**30%**	**15%**	**32%**	**40%**	**34%**	**0%**	**51%**	**29%**
							Building Average	**29%**

Utilization Rate 2021/22 Winter Term	Winter term starting 1/3/22. Percentage occupancy by room 8am to 8pm							Daily Average
Semon	Room Numbers							
	123	142	203	204	209	210	226	
Mon	8%	17%	8%	50%	38%	50%	54%	**32%**
Tues	38%	42%	25%	-	46%	25%	100%	**39%**
Wed	8%	17%	13%	50%	38%	25%	100%	**36%**
Thu	100%	42%	17%	-	38%	-	100%	**42%**
Fri	-	17%	13%	50%	25%	50%	25%	**26%**
Weekly Average by Room	**31%**	**27%**	**15%**	**30%**	**37%**	**30%**	**76%**	**35%**
							Building Average	**35%**

Utilization Rate 2021/22 Spring Term	Spring term starting 3/28/22. Percentage occupancy by room 8am to 8pm							Daily Average
Semon	Room Numbers							
	123	142	203	204	209	210	226	
Mon	46%	17%	17%	50%	33%	-	25%	**27%**
Tues	33%	25%	13%	25%	21%	-	-	**17%**
Wed	54%	17%	17%	50%	33%	-	25%	**28%**
Thu	33%	8%	13%	25%	21%	-	-	**14%**
Fri	-	17%	17%	50%	33%	-	-	**17%**
Weekly Average by Room	**33%**	**17%**	**15%**	**40%**	**28%**	**0%**	**10%**	**21%**
							Building Average	**21%**

Dow Utilization Rates 2021/22

Utilization Rate 2021/22 Fall Term	Percentage occupancy by room 8am to 8pm																									Daily Average
Dow	Room Numbers																									
	100	101	103	104	107	111	112	115	120	130	E150	E237	E240	E242	E243	E246	E248	E255	252	253	257	258	262	263	E345	E346	
Mon	75%	50%	17%	8%	17%	-	-	-	-	25%	-	58%	58%	33%	-	-	25%	25%	58%	-	-	-	8%	-	50%	42%	**23%**
Tues	19%	50%	25%	75%	-	-	50%	50%	-	50%	-	13%	33%	25%	25%	-	25%	50%	21%	50%	50%	50%	42%	50%	-	25%	**32%**
Wed	75%	50%	17%	8%	29%	-	-	-	-	25%	-	58%	50%	8%	25%	25%	25%	50%	50%	-	-	-	25%	-	50%	42%	**26%**
Thu	19%	50%	-	75%	25%	50%	-	50%	-	25%	-	13%	50%	25%	42%	-	25%	50%	8%	25%	75%	50%	-	-	25%	25%	**29%**
Fri	75%	-	17%	8%	17%	-	-	-	-	-	-	58%	50%	33%	-	-	-	25%	42%	-	-	-	25%	-	50%	42%	**18%**
Weekly Average by Room	**53%**	**40%**	**15%**	**35%**	**18%**	**10%**	**10%**	**20%**	**0%**	**25%**	**0%**	**40%**	**48%**	**25%**	**18%**	**5%**	**20%**	**40%**	**36%**	**15%**	**25%**	**20%**	**20%**	**10%**	**35%**	**35%**	-
																								Building Average			**26%**

Utilization Rate 2021/22 WinterTerm	Percentage occupancy by room 8am to 8pm																									Daily Average
Dow	Room Numbers																									
	100	101	103	104	107	111	112	115	120	130	E150	E237	E240	E242	E243	E246	E248	E255	252	253	257	258	262	263	E345	E346	
Mon	25%	42%	-	-	29%	33%	-	-	-	-	-	50%	50%	42%	25%	38%	-	-	42%	-	-	-	-	17%	33%	25%	**19%**
Tues	17%	50%	50%	25%	50%	-	-	-		50%	-	38%	33%	63%	38%	13%	25%	25%	8%	25%	75%	50%	50%	50%	13%	25%	**32%**
Wed	25%	25%	25%	-	29%	33%	-	-	-	25%	-	50%	75%	42%	13%	38%	25%	25%	54%	-	-	-	-	42%	33%	25%	**24%**
Thu	17%	50%	25%	75%	50%	-	-	50%	-	-	-	38%	38%	63%	13%	38%	-	25%	8%	25%	75%	50%	50%	25%	13%	25%	**31%**
Fri	25%	-	-	-	29%	-	-	-	-	-	-	50%	42%	42%	13%	13%	-	-	25%	-	-	-	-	17%	25%	-	**12%**
Weekly Average by Room	**22%**	**33%**	**20%**	**20%**	**37%**	**13%**	**0%**	**10%**	**0%**	**15%**	**-**	**45%**	**48%**	**50%**	**20%**	**28%**	**10%**	**15%**	**27%**	**10%**	**30%**	**20%**	**20%**	**30%**	**23%**	**20%**	-
																								Building Average			**24%**

Utilization Rate 2021/22 WinterTerm	Percentage occupancy by room 8am to 8pm																									Daily Average
Dow	Room Numbers																									
	100	101	103	104	107	111	112	115	120	130	E150	E237	E240	E242	E243	E246	E248	E255	252	253	257	258	262	263	E345	E346	
Mon	50%	50%	-	17%	17%	-	33%	-	-	-	-	83%	42%	46%	-	50%	-	33%	42%	-	-	-	-	-	54%	8%	**22%**
Tues	17%	25%	50%	-	50%	25%	25%	-	50%	50%	50%	25%	33%	17%	46%	13%	-	-	25%	-	75%	50%	25%	75%	-	-	**30%**
Wed	75%	25%	-	17%	17%	-	8%	-	50%	-	-	67%	42%	46%	25%	29%	-	33%	42%	-	-	-	25%	-	29%	8%	**22%**
Thu	17%	25%	50%	75%	-	50%	-	50%	50%	-	50%	25%	33%	17%	-	25%	-	25%	25%	-	75%	50%	50%	25%	13%	-	**30%**
Fri	42%	25%	-	17%	17%	-	8%	-	-	-	-	67%	42%	25%	-	-	-	33%	42%	-	-	-	-	-	-	8%	**14%**
Weekly Average by Room	**40%**	**30%**	**20%**	**25%**	**20%**	**15%**	**15%**	**10%**	**30%**	**10%**	**-**	**53%**	**38%**	**30%**	**14%**	**23%**	**0%**	**25%**	**35%**	**0%**	**30%**	**20%**	**20%**	**20%**	**19%**	**5%**	**24%**
																								Building Average			**24%**

Portland-Metro Utilization Rates 2022

Calendar Year Utilization - Winter term 1/3/22 - Percentage occupancy by room 8am to 10pm							
Room Numbers	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	**Weekly Average by Room**
Level 1							
106	54%	54%	-	21%	-	21%	**25%**
113	-	-	-	-	-	-	**-**
114	-	-	-	-	-	-	**-**
116	-	-	53%	53%	-	-	**18%**
120	32%	57%	11%	-	50%	-	**25%**
122	36%	21%	43%	-	-	-	**17%**
124	39%	50%	21%	32%	-	-	**24%**
125	-	-	-	-	-	-	**-**
127	-	-	-	-	-	-	**-**
149	-	-	-	-	-	-	**-**
150	-	-	-	-	-	-	**-**
151	-	-	-	-	-	-	**-**
152	-	-	-	-	-	-	**-**
153	-	-	-	43%	-	-	**7%**
156	-	-	-	-	-	-	**-**
Level 2							
201	43%	43%	64%	21%	21%	43%	**39%**
203	-	68%	21%	32%	21%	21%	**27%**
207	21%	21%	-	57%	21%	21%	**24%**
209	-	21%	21%	21%	36%	21%	**20%**
215	57%	-	43%	21%	-	21%	**24%**
217	-	56%	21%	21%	21%	-	**20%**
220	29%	29%	-	-	-	-	**10%**
240	-	11%	-	11%	29%	21%	**12%**
243	50%	50%	36%	14%	50%	43%	**41%**
244	21%	36%	50%	-	29%	-	**23%**
246	-	-	29%	-	-	-	**5%**
247	46%	14%	21%	14%	-	-	**16%**
248	-	36%	29%	7%	-	-	**12%**
250	-	-	-	-	-	-	**-**
256	21%	-	21%	21%	-	-	**11%**
257	-	-	-	-	-	-	**-**
Level 4							
404	-	39%	-	54%	21%	-	**19%**
408	-	-	21%	-	43%	-	**11%**
424	-	43%	21%	-	-	-	**11%**
427	-	-	-	-	-	-	**-**
428	36%	21%	-	-	-	-	**10%**
434	-	-	21%	21%	-	-	**7%**
452	14%	14%	43%	43%	-	-	**19%**
456	-	29%	43%	43%	30%	-	**24%**
461	-	-	-	-	-	-	**-**
Daily Ave.	12%	17%	15%	13%	9%	5%	**-**
						Building Average	**12%**
Canyon Creek	-	-	-	-	-	-	**-**
CC101	-	21%	21%	-	-	-	**-**

Portland-Metro Utilization Rates 2022

Calendar Year Utilization - Fall term 9/28/22 - Percentage occupancy by room 8am to 10pm							
Room Numbers	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	**Weekly Average by Room**
Level 1							
106	39%	75%	21%	21%	-	-	**26%**
113	-	50%	-	-	-	-	**8%**
114	-	-	-	54%	-	-	**9%**
116	-	-	-	-	-	-	**0%**
120	-	61%	43%	50%	18%	21%	**32%**
122	-	43%	11%	25%	-	-	**13%**
124	36%	57%	75%	-	-	21%	**32%**
125	-	-	-	-	-	-	**0%**
127	-	-	-	21%	-	-	**4%**
149	-	-	-	-	-	-	**0%**
150	-	-	-	-	-	-	**0%**
151	-	-	-	-	-	-	**0%**
152	21%	-	-	-	-	-	**4%**
153	-	21%	-	21%	-	-	**7%**
156	-	-	-	-	-	-	**0%**
Level 2							
201	36%	43%	43%	21%	-	-	**24%**
203	36%	46%	-	21%	21%	21%	**24%**
207	43%	14%	21%	43%	-	21%	**24%**
209	36%	36%	21%	-	21%	43%	**26%**
215	-	79%	43%	43%	-	43%	**35%**
217	-	21%	21%	21%	21%	-	**14%**
220	-	54%	-	57%	-	21%	**22%**
240	21%	21%	21%	-	-	43%	**18%**
243	32%	57%	57%	21%	36%	-	**34%**
244	21%	29%	50%	-	36%	-	**23%**
246	57%	29%	-	29%	21%	-	**23%**
247	61%	61%	46%	-	-	-	**28%**
248	43%	50%	-	32%	-	36%	**27%**
250	-	36%	-	-	-	-	**-**
256	29%	-	29%	29%	-	-	**15%**
257	-	-	-	-	-	-	**-**
Level 4							
404	36%	11%	-	32%	-	21%	**17%**
408	-	-	36%	32%	-	-	**11%**
424	36%	71%	21%	-	-	-	**21%**
427	-	-	-	-	-	-	**-**
428	-	-	21%	-	-	-	**4%**
434	-	21%	-	-	-	-	**4%**
452	-	-	-	-	-	-	**0%**
456	-	-	-	-	-	-	**0%**
461	-	-	-	-	-	-	**-**
Daily Ave.	14%	24%	14%	14%	4%	7%	**-**
						Building Average	**13%**
Canyon Creek	-	-	-	-	-	-	**-**
CC101	-	-	57%	-	43%	-	**-**

Portland-Metro Utilization Rates 2022

Calendar Year Utilization - Spring term 3/28/22 - percentage occupancy by room 8am to 10pm							
Room Numbers	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	**Weekly Average by Room**
Level 1							
106	36%	36%	64%	-	21%	21%	**30%**
113	-	-	-	-	-	-	**0%**
114	-	-	36%	-	-	-	**6%**
116	-	-	14%	-	-	-	**2%**
120	-	-	-	-	-	-	**0%**
122	-	-	-	-	-	-	**0%**
124	-	-	-	-	-	-	**0%**
125	-	-	-	-	-	-	**0%**
127	-	-	-	-	-	-	**0%**
149	-	-	-	-	-	-	**0%**
150	-	-	-	-	-	-	**0%**
151	-	-	-	-	-	-	**0%**
152	-	-	-	21%	-	-	**4%**
153	-	-	-	21%	-	-	**4%**
156	-	-	-	-	-	-	**0%**
Level 2							
201	43%	11%	50%	29%	43%	43%	**37%**
203	43%	50%	29%	21%	21%	-	**27%**
207	36%	39%	64%	50%	-	-	**32%**
209	29%	7%	29%	57%	21%	43%	**31%**
215	-	21%	21%	21%	-	43%	**18%**
217	-	50%	21%	21%	21%	-	**19%**
220	32%	36%	32%	-	-	-	**17%**
240	-	21%	-	-	-	21%	**7%**
243	-	64%	43%	21%	21%	-	**25%**
244	14%	14%	29%	29%	14%	14%	**19%**
246	21%	-	57%	-	-	-	**13%**
247	-	71%	-	14%	21%	21%	**21%**
248	29%	50%	43%	21%	21%	-	**27%**
250	-	21%	-	-	21%	-	**-**
256	-	29%	-	29%	-	-	**10%**
257	-	-	-	-	-	-	**-**
Level 4							
404	-	-	32%	21%	21%	-	**12%**
408	-	43%	-	11%	43%	21%	**20%**
424	21%	21%	-	21%	21%	-	**14%**
427	-	-	-	-	-	-	**-**
428	-	-	-	-	-	-	**0%**
434	-	-	43%	-	-	-	**7%**
452	-	4%	43%	-	64%	-	**19%**
456	-	25%	43%	43%	43%	-	**26%**
461	-	-	-	-	-	-	**-**
Daily Ave.	7%	15%	17%	11%	10%	6%	**-**
						Building Average	**11%**
Canyon Creek	-	-	-	-	-	-	**-**
CC101	29%	21%	21%	-	-	-	**12%**

Conference Rooms

All of the reservable conference room or non-classroom meeting space is located in the College Union (CU). This is scheduled by the CU manager's office. The available hours for occupancy are between 7 am and 10 pm. The reservable space includes circulation space outside of enclosed rooms, which is used for exhibits, bake sales, and similar events that are oriented toward participation from passersby. The utilization for the last year is listed below.

5/8/22 – 5/8/23: Confirmed Reservations		7am - 10pm		
Room	**Booking Count**	**Reservation Hours**	**Avg Hrs/Month***	**Utilization %**
Sunset	358	1408.75	156.53	34.8%
Auditorium	150	1337.25	148.58	33.0%
Crater Lake Complex	96	874.67	97.19	21.6%
Mt. McLoughlin	171	828.67	92.07	20.5%
Bailey/Thielsen	119	759.83	84.43	18.8%
Mt. Thielsen	150	676.83	75.20	16.7%
Auditorium Lobby	54	610.50	67.83	15.1%
Bookstore Lobby Right	72	570.75	63.42	14.1%
Main Entrance Right	60	555.00	61.67	13.7%
Mt. Bailey	51	393.50	43.72	9.7%
Mt. Mazama	55	349.83	38.87	8.6%
Mazama/Scott	45	315.08	35.01	7.8%
Mt. Shasta Lounge	37	298.58	33.18	7.4%
Cascades	19	267.00	29.67	6.6%
Union Peak Lounge	25	221.00	24.56	5.5%
Equip Loans: Check out & Check in	25	209.00	23.22	5.2%
Main Entrance	20	179.50	19.94	4.4%
Main Entrance Left	17	121.00	13.44	3.0%
East Auditorium	9	109.00	12.11	2.7%
West Auditorium	9	109.00	12.11	2.7%
Bookstore Lobby Left	11	94.50	10.50	2.3%
South Courtyard	11	70.83	7.87	1.7%
Mt. Scott	9	69.50	7.72	1.7%
Mazama/Scott Lobby	4	44.50	4.94	1.1%
Fountain	3	22.50	2.50	0.6%
Shasta/Bachelor Lounge	2	16.00	1.78	0.4%
Cascades Deck	1	12.50	1.39	0.3%
Union Bistro	3	11.42	1.27	0.3%
Mt. Bachelor Lounge	2	9.50	1.06	0.2%
NW Entrance Walkway/Courtyard	1	5.00	0.56	0.1%

*450 bookable hours per month for 9 months per year (June, July, August only lightly occupied)

Overall, the scheduled use is low. Reasons for this may include spaces oversized for the intended meeting and the odd shapes that characterize most of them. The Auditorium is not accessible at the stage or front row level. People interviewed stated that sound isolation is a problem with these rooms.

The College Union is in need of renovation due to dated finishes, seismic issues, and mechanical issues. A total renovation could include the addition of more conventionally shaped and organized meeting rooms with better sound isolation. Better organized meeting spaces might also increase the attractiveness of the building for catered events.

There are additional conference rooms in other buildings on each campus with no apparent method of scheduling. These are typically managed by adjacent academic departments. Examples include CEET rooms 248 and 250. Throughout discussions with Oregon Tech stakeholders, there were no comments on unavailability of conference room space and this does not appear to be an issue.

Office Space

Interviews revealed severe crowding for some administrative departments. Admissions, for example, is crowded into windowless space on the ground floor of the College Union and has staff doubling up in workstations and offices. Besides doubling up, they have staff working remotely in part because there is no room.

The Registrar and Cashier's Office have the same problems — windowless space and overcrowding — but in the basement of Snell Hall, instead of the College Union.

The University Development Office, along with Marketing, Communications, and Public Affairs, is located in leased office space downtown. If there were office space available on campus, they would relocate there.

Relocation of these departments into a new Center for Student Success would be very desirable. Productivity and morale would be enhanced if staff could work in an office on campus and not be forced to work remotely due to lack of space.

Regarding office space for academic departments, each department allocates office space to their own faculty and staff. Throughout the interviews conducted, no problems were mentioned for this type of space use. However, when new programs are added there may be a consequent need for more office space. An example is the new Doctor of Physical Therapy program.

Teaching Lab Space

The renovation of Cornett and Boivin and the construction of CEET have made significant upgrades to lab space for the programs they house. Interviews indicated lab space in Dow is adequate except for an expansion in the basement planned for currently unused space for the Physical Therapy program.

Purvine has communications public speaking labs in rooms 211 and 222 that are dysfunctional for current teaching methodology in those fields. As a result, they have utilization rates of only 7 percent and 18 percent over the academic year. Many other rooms have low utilization. For example, Room 125 is almost never used.

Semon is home to several dental programs, including an active dental clinic and a community dental hygiene practicum clinic. The dental programs all need more space. More students could be admitted to the program if there were more available practice chairs. The onsite dental clinic also needs more patient chairs, and more space is needed for a new clinical lab. The dental programs have been in Semon since 1969 and have had few upgrades since then. The building is one of the last original campus buildings that has not had a seismic upgrade and discussions have been held on renovating the building while maintaining occupancy. However, the dental programs are so large that this is impossible. Recently, a concept has been discussed to relocate the programs to Purvine, which has a low utilization rate, either temporarily or permanently while Semon undergoes a major renovation.

Research Lab Space

Oregon Tech has asserted as a strategic initiative that it will grow faculty research over the next several years. This is consistent with the University Mission and Academic Master Plan. The faculty experience is enriched through a balanced approach to teaching, research, and service. As these research activities begin to grow, the University will need to develop additional individual research and laboratory space to accommodate research in engineering, science, the health sciences, and other disciplines to support and encourage faculty excelling in these areas. Current space utilization rates of general classroom space in many academic buildings are at levels that would support the capacity to repurpose space for individual faculty research labs.

Miscellaneous Space

1. Athletics needs a heated fieldhouse adjacent to the athletic building to extend the sports season through the cold weather months.
2. At the soccer field, Athletics can increase the attractiveness of the venue by adding spectator seating, restrooms, changing facilities, and infrastructure to support food trucks.
3. Facilities needs an additional storage building adjacent to their other buildings.
4. Environmental Sciences needs a building to store fieldwork supplies and clean up after field operations.
5. The Oregon Renewable Energy Center is funded for a prototype greenhouse with integrated photovoltaics and needs a location.
6. The Integrated Student Health Clinic needs more exam rooms for physical health and more counseling rooms for mental health. This need will increase as the new student residence hall is completed and the student population rises.

8.0 Sustainability

Energy Use

Water Use

Transportation

Energy Use

The Oregon Tech Klamath Falls campus can easily lay claim to being one of the most sustainable higher education institutions. Located in a cold climate, Oregon Tech has access to geothermally heated water and uses it to heat nearly all the buildings on campus. It is also largely a gravity fed system, reducing the need to pump hot water and the consequent electric power required.

Oregon Tech also uses the geothermal resource in two electric power plants that are based on the organic rankine cycle to produce electricity. The first plant built is rated at 280 kilowatts (kW) and the second at 1.75 megawatts (MW). The larger plant has had problems, and part of this master plan discusses the potential resolution to the problems in Section 4.0 Major Recommendations. Once running correctly, the larger plant, while being renewable, will also reduce annual power bills by up to $500,000. Oregon Tech also has a 2 MW photovoltaic array powering the University's power grid.

While on the supply side Oregon Tech is very sustainable, on the demand side there is not enough information to even know if there is room for improvement. Heating is provided campuswide by geothermal hot water, but the only buildings on campus that are capable of metering and measuring the annual geothermal energy use are in the Village for Sustainable Living. There is no information available for other buildings on whether they use a lot of energy for heating or a little.

Cooling is provided by an electrically powered, central chilled water plant for:

- Snell,
- College Union,
- Athletics,
- Owens,
- Dow,
- Semon,
- Boivin,
- Cornett, and
- Learning Resource Center.

Cooling is provided by electrically powered, individual building cooling systems for:

- Purvine,
- CEET,
- The Village for Sustainable Living, and
- The new residence hall.

There is no cooling in the existing residence hall and only partial cooling in the facilities building. The Athletics building also has a mix of additional small air conditioning units to serve offices and other accessory spaces.

Except for Dow and CEET, there are no chilled water meters to track cooling energy use on the buildings that use centralized chilled water. And, except for CEET, there are no electrical submeters to track cooling energy used in the buildings that have individual cooling systems.

Currently, annual energy use is not tracked for each building. Most of the buildings on the Klamath Falls campus use the Metasys building controls management system and have reporting capability on electric power usage, but there is no annual reporting on building energy use or tracking changes from year to year.

Demand management is an important part of sustainability. Oregon Tech does not currently know how much energy each building uses, whether renewable or not. It's not known how the buildings compare to other similar buildings in similar climates. It's not known if there is room for improvement. Demand management could potentially make better use of the resources available. It's commonly thought, for example, that the central chiller plant has no more capacity to serve another building. But what if the existing buildings could reduce their demand by 30 percent or more? That would in effect make more chilled water available and allow new buildings to use that central plant.

Demand management can consist of building envelope strategies (like increasing insulation or air tightness), improvements to the HVAC systems, or even operations practices. For example, one significant component of the existing building load is morning warm-up from a night setback.

Currently, indoor temperatures are set back at night and the maximum geothermal system demand occurs during the morning warm-up. In most systems, this night setback reduces energy use because the temperature difference between the inside of the building and the outdoor air is reduced during the setback periods.
However, this approach increases peak demand for geothermal morning warm-up as all of the buildings on campus move simultaneously from indoor temperatures of 65 degrees to 70 degrees. This activity also increases morning electrical use within each building for pumps and fans.

Another approach would be to operate building systems overnight at minimum ventilation rates and pump speeds, but without a night setback. This will use less electrical power than operating at maximum rates for several hours at morning warm-up.

Eliminating the night setback and morning warm-up will reduce cooling and heating stress on the building HVAC systems and will reduce the peak heating demand on the geothermal heating system. It will also reduce the electrical energy use for fans and pumps.

If individual buildings were metered, this approach could be tested on one building before applying it to all buildings. Other demand management measures may also reduce energy use and thereby increase resource capacity for future uses. However, without measuring energy use, there is no way to know if the current energy use can be reduced.

The one exception to lack of measurement of energy use is an analysis done after one year of occupancy in the Village for Sustainable Living. This project was equipped with electrical meters and BTU meters to measure the amount of geothermal heat used (CEET also had modeling done and has meters in place to record the electrical and geothermal heat used, but no output is available yet). The annual energy use is expressed as an energy use index, or EUI, in terms of kBTU/SF/year. The modeled energy use and the recorded annual energy use for each building in the first year of operation was:

EUI in kBTU/SF/year	Modeled Total Energy Use	Recorded Electrical Use	Recorded Geothermal Use	Recorded Total Energy Use
Village Building A (yellow)	24.8	23.2	3.4	26.6
Village Building B (blue)	21.0	25.2	65.4*	90.7*
Village Building C (red)	27.6	24.0	14.0	38.0
CEET	42.8	-	-	-

*Building B provides sidewalk snowmelt heat and does not have a separate meter on the snowmelt system.

Energy Recommendation

It is recommended that electrical meters be installed in each building to measure total electrical use and separate electrical use for cooling systems at Purvine, CEET, and the new residence hall. BTU meters should be installed on incoming and return chilled water if the building is served by campus central chilled water. BTU meters should also be installed on supply and return lines to each building for the geothermal water for heating.

Over time, Oregon Tech will be able to compare building energy use, and direct improvements to buildings which show unusually high energy use. This will also help in evaluating the remaining system capacity for the chilled water and geothermal heating central plants.

An immediate opportunity is present in the design of the new residence hall. Metering should be incorporated into the design. If snowmelt is controlled off of the building system, it should be separately metered. Energy modeling should be done to compare the projected energy use to the energy use in the Village buildings to ensure that the design is at least as efficient as the Village buildings, and preferably better.

Electrical and gas metering exists at the Portland-Metro Building. Data from these utility meters should be compiled into annual energy use figures each year.

Water Use

Klamath Falls has always had a dry climate, but recent droughts may indicate a climate change towards an even drier condition. Annual average precipitation for the years 1930 -2001 is just under 14 inches. Recent precipitation has been significantly less:

Year	Amount
2022	8.6”
2021	9.0”
2020	6.7”
2019	12.0”
2018	9.0”

The Klamath Falls campus is supplied with water by several wells and a storage tank. It has an emergency connection to the city water supply with a meter, but this valve is generally closed. The well water supply has high concentrations of arsenic, exceeding the EPA safe limit of 10 ppb or .01mg/liter. Several filters have been installed to remove the arsenic at potable tap locations, and non-potable taps have been identified with signs. Many of the filters are point-of-use type, located at the tap, but some, such as in the Village buildings, are quite large and serve whole buildings.

As with energy use, Oregon Tech currently has no direct data on how much water is used in each building, or how much is used for landscape irrigation. Metering water use can help identify long-term problems such as a building still using older high flush toilets, or short-term problems like a hidden pipe leak.

Water Recommendation

Water conservation and water safety are both important aspects of sustainability. Water meters should be added to the supply for each building. At the College Union, separate metering should be added to record culinary water use including dishwashing. Given the age of this facility, there may be significant water conservation measures possible.

In addition, all older water closets and faucets should be replaced with EPA WaterSense-rated units.

Irrigation systems should be on separate meters and controlled by EPA WaterSense-rated soil moisture or evapotranspiration control systems.

Landscaping should de-emphasize irrigated turf lawns and be oriented towards dry climate plantings of trees, shrubs, and groundcovers. Irrigation at new landscaped areas should be used only for establishing new plantings, rather than ongoing support. This can gradually change the look of the campus and will have to be designed very carefully. There will always be a place for irrigated lawns since they reinforce the image of an academic environment. A model for this type of planting could be found in the native plant garden near the Facilities Building. A selection of appropriate plants has also been added as Appendix 11.5 *Landscaping*.

Reducing water use in such an obvious way sends a clear message about the sustainability values that Oregon Tech holds. Interviews with campus users repeatedly recorded comments to the effect that turf lawns were not much appreciated but trees and shrubs were desirable. Water use reduction also adds to the resilience of the campus. Anecdotally, the water storage tank has in the past been nearly emptied in the summer for irrigation, putting in jeopardy the ability of building sprinkler systems to extinguish fires.

Transportation

Klamath Falls transit serves the campus hourly from about 7 am to 5 pm. The bus stop is at Campus Circle. A bike path runs parallel to Crater Lake Parkway for much but not all of its length to Campus Drive, and the City has marked the ring road around campus as a bike route on their published maps. Biehn Street and Nevada Avenue have bike lanes from Campus Drive to Moore Park on the lake and to the bike path along the Link River.

Bike use does not seem to be common, though. Not every building has a bike rack at their main entries, and those that do are not full. Most people commute to campus by personal car. Oregon Tech has added two electric vehicle recharging stations recently and should monitor their use to see if more are needed over time.

One of the ways to reduce transportation energy and pollution is to develop residential and perhaps even retail opportunities closer to campus. The new residence hall has the potential to gather students from apartments around Klamath Falls and locate them within walking distance of classes. Another opportunity would be to develop apartments suitable for students, staff, or faculty on the land to the west of the campus along Dan O'Brien Way.

At the Portland-Metro campus, the site is well served by transit, but is remote from affordable residential developments and retail activities. There is space available to develop residential uses, which could be a way to reduce transportation energy and pollution.

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9.0 Traffic and Parking

Klamath Falls

Current Parking and City Parking Requirements
Proposed Changes
Traffic

Portland-Metro

Current Parking and City Parking Requirements
Proposed Changes

Klamath Falls

Current Parking and City Parking Requirements

There are currently 1,529 paved parking stalls on campus. Most are located within the ring road bounding the campus, but 95 are outside of it — 25 to the east of the Village for Sustainable Living and 70 south of Campus Drive adjacent to Sky Lakes Medical Center. There is also a gravel lot north of the ring road near the Stadium that is only used for athletic events.

The City of Klamath Falls zoning code has a Planned Unit Development (PUD) zone covering the campus. The PUD zoning requirements refers to the Community Development Ordinance Section 14.005 for parking requirements. These are specified as follows:

1. "College classrooms" require one parking space per employee plus one for every four "classroom seats." Currently this is not enforced, because the City does not require Oregon Tech to regularly report the number of employees or classroom seats as they change from year to year.
2. "Dormitories" require five parking stalls per building plus one for every two beds. Currently this is enforced through the site plan review permit process.
3. There is no requirement that parking spaces be adjacent to any particular building.

If "classroom seats" is interpreted literally, one would have to go through every classroom on campus and count chairs. The assumption embedded in the requirement is that 25 percent of all chairs on campus are occupied simultaneously at all hours, every day, by someone who parked a car. There are a number of problems with this approach:

1. A current inventory of chairs would probably show a very large parking deficit under these criteria. It's doubtful that over time, as chairs have been added or subtracted from rooms, anyone has related this to parking by notifying the City. Also, a given room may be used for a small class of 10 students one term, and a large class of 30 or more the next term using the same number of chairs. But parking is theoretically based on the maximum number of students in the classroom.
2. Not all students are on campus all hours and all days. This approach cannot account for that.
3. Students who live on campus are unfairly double counted. There is a parking requirement for students who live in dormitories on campus, and then they are counted again as occupants of classroom seats.

Proposed Changes

The apparent intent of the requirement is to base parking requirements on the number of students on campus at any one time. A more direct approach would be to replace classroom seats with the number of enrolled commuting students who do not live on campus. This is a number that Oregon Tech tracks very closely, as opposed to the number of chairs. If this approach is taken, the number of students living on campus would not be double counted and there will be separate requirements for commuter students and resident students.

It is recommended that the Community Development Ordinance be changed or re-interpreted to reflect this. The number of parking stalls on campus should be based on the number of people on campus. There are many different types of buildings — more than dormitories and classrooms — but there are never more than the total number of students and staff on site, except for a few visitors. That fixed number of students and staff move around from building to building all day, so parking should not be based on the number of buildings, but on the number of people.

If that is done, then current parking requirements are:

Category	Population	Community Development Formula	Stalls Required
Commuting Students	1,307	1,307 x 0.25	329
Staff	353	353	353
Existing Dormitories	677	(677 x 0.5) + (5 x number of buildings)	358
New Dormitory	500	(500 x 0.5) + 5	255
Total	**3,084**	**-**	**1,295**

There are currently 1,529 stalls on campus, which is an excess of 234 stalls — about 18 percent more than required — so the new dormitory would not require any additional parking stalls. The 18 percent excess should be enough to handle the relatively small number of daily visitors.

Several meetings were held with Klamath Falls City Planning staff and they agreed that this approach is reasonable and that further discussions should determine the best way to implement a change to the text of the requirements.

Traffic

A more intensive traffic study was carried out by Kittelson Associates and is listed in Appendix 11.1 Transportation Systems Assessment – Kittelson & Associates.

Portland-Metro

Current Parking and City Parking Requirements

There are currently 507 parking spaces within the property boundaries of the Portland-Metro Building. However, the property was originally developed as an office park, and there are no clear boundaries to designate which parking areas are for use by Oregon Tech, or for use by Oregon Tech's tenant in the building, Collins Aerospace, or for use by adjacent office park buildings. The maximum number of parking stalls on the property allowed by the Wilsonville zoning code is 511 spaces. Until recently, the required minimum number of stalls was 339.

Observations of parking on site and in the adjacent business park facilities show that none of the parking lots are ever crowded. This was the case even before remote working became more prevalent and is even more evident now.

Proposed Changes

A recent ruling by the Land Conservation and Development Commission banned local governments from requiring a minimum number of parking spaces in locations within a half mile of a transit stop. The Portland- Metro site falls within this category, and it is recommended that the seldom-used parking stalls be made available for development of other Oregon Tech facilities such as housing. Discussions with the Wilsonville Community Development department indicate enthusiastic planning support for repurposing of parking areas into housing.

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10.0 Campus Design Guidelines

Buildings

Space

Buildings

Most of the stakeholders interviewed strongly felt that buildings on the Klamath Falls campus were too drab and too uniform. Many of the buildings exhibit some shade of gray as the predominant color.

Original residence hall (left) and Athletics (right) shown with gray exteriors

Stakeholders also felt there are too many horizontal surfaces like paving and lawns, with too few trees and not enough places to sit comfortably outdoors.

Additionally, stakeholders communicated they felt variety should be prized over uniformity. Design should encourage color and perhaps existing buildings could even be enhanced to add variety. For example, the existing residence hall could be simply painted to add variety.

Conceptual images depicting original residence hall in alternate paint colors

It is recommended that new buildings look different from adjacent buildings, while still having a family resemblance. They could have the same materials in a different color, or some of the same materials mixed with new materials. Creativity should be emphasized. Buildings should not exactly replicate the forms and materials of adjacent buildings, as Semon, Owens, and Boivin have done.

Materials should be durable and low maintenance. However, exposed wood should be avoided since it degrades more quickly under the stronger solar radiation at Oregon Tech's higher altitude.

Space

A program should be developed in concert with Oregon Tech's marketing department to create guidelines for the landscape between buildings that reflect the University's marketing materials. Guidelines can include seating, trash cans, directional signs, notice boards, bike racks, and signage for buildings. Few buildings have signage at their entries displaying the name of the building; a consistent signage approach would be beneficial.

Existing sidewalks can be replaced at key locations with landscaped and tree-covered seating areas. For example, in the area below, there is bench seating available, but it still is not an attractive place to sit. The benches are surrounded by horizontal hard surfaces and lawns, with no shade, and are close to public pedestrian traffic. Seating like this should be placed in "alcoves" close to but not directly within the main thoroughfare, and should offer a perception of protection from passersby, a sense of partial enclosure, vertical elements, and shade.

Area in front of LRC

These outdoor spaces can benefit from a small amount of professional design attention or could become a project for a civil engineering class.

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