OSU-Cascades
Long Range Development Plan
Bend, Oregon

Work Session II
August 2, 2016

Sustainability Advisory Committee Meeting
2:00pm – 4:00pm
Sustainability Background

- Pre LRDP

Note: This is a working draft document for OSU Cascades and Sustainability Advisory Committee review only
Community Engagement for Long Range development Planning

- Sustainability Committee

Vision:

• OSU-Cascades is a model for sustainable design and practices. The campus presents an experience that transforms behavior of the campus community and visitors, on and off campus

• A curriculum focused on promoting and innovating sustainable practices attracts unique students, faculty, and corporate investment to benefit the university and community

• OSU-Cascades demonstrates an unwavering commitment to shaping a future that is socially, economically and ecologically sustainable

Highlights:

• Design a well-planned green campus that is a living laboratory for a sustainable educational community

• Build systems to educate, encourage and track individual and campus-wide environmental “footprints”

• Create and promote the business case, branding and track record to gain community support and engagement with OSU-Cascades as a unique, attractive and influential “Living Learning Lab for Sustainability”

• Secure strategic collaborative partnerships with local and regional corporate, governmental and community leaders for the resources, expertise and commitment to implement and sustain sustainable innovations over the long term
**Community Engagement for Long Range development Planning - Sustainability Committee**

**Trends:**

- **Increasing student debt** challenging equitable access to a college education for all students.

- Interest in but complexity with **integrating community values and policies** especially related to natural resource use and regeneration.

- Creating a curriculum and **campus culture focused on entrepreneurial resource-regeneration** as an alternative to a focus on a growing economy.

- **A priority for academic excellence** to attract students, faculty and resources.

- Clear **regional and community demand for alternative transportation options** – bus, ride-sharing, bicycle, and pedestrian paths, designs and infrastructure.
Signature Design Elements

- Passive solar design with high performance building shell and HVAC
- Innovative use of wood products
- Heating systems for all buildings should be compatible with multiple heat sources
- Biomass boiler for space and domestic water heating
- Innovative water management strategies

Community integration
Building certification
Energy monitoring and management systems
Solar energy systems
Educate
Materials should honor the High Desert Region
Materials should emphasize Oregon wood products wherever possible
Sourcing of building materials should be consistent with Living Building Challenge
The architectural style should reflect Central Oregon’s past but also set the tone for the future
Landscaping at the site should utilize Potential Natural Vegetation
Site development should proceed under a guideline of minimal disturbance to significant natural features
Plant materials removed from the site should be retained for reuse in landscaping
Building styles and function should integrate with future campus vision
Integrate buildings into the landscape

Buildings and landscaping for the campus should be designed as interpretive elements in a coordinated living/learning “museum”, highlighting innovative building approaches, utility systems, learning environments and natural features
Site buildings and connectivity options with integration into existing commercial areas, neighborhood districts and travel corridors to the greatest extent possible
The design and layout of the campus should present an experience that transforms occupant and visitor behavior on and off campus
Seek out opportunities to partner with BPRD on campus recreational/connectivity opportunities
Seek opportunities to balance building density with preservation/restoration of significant natural features at the site.
Investigate and pursue Ecodistrict support and engagement for site and off-site development approaches
Approach to Net Zero Design
Sustainable Design Approach

(Note: This approach is similar for all sustainability topic areas, e.g. Energy Water, Waste, Carbon, etc.)

- Set Aspirational Goals that Inspire
- Understand the Climate and its Implications to Resources (Locally, Regionally)
- Benchmark to the Campus Program (Near, Mid and Long Term)
- Minimize/Optimize Resource use (e.g. passive designed/low energy buildings)
- Choose/develop efficient technologies (e.g. LED lights; low-flow fixtures, etc.)
- Strategically deploy key technologies (e.g. On-Site Renewables)
- Occupy and *Operate with Intention*
- Measure and Verify Performance (and sync with academics as appropriate)
- Utilize Feedback Loops to engage individuals to become active participants
- Continuously Improve Performance by *Adjusting Policies and Goals*
Draft Sustainability Topics

Note: This is a working draft document for OSU Cascades and Sustainability Advisory Committee review only.
Campus Sustainability - Topics

- Energy
- Water
- Waste
- Carbon
- Habitat/Ecology
- Resiliency

- Economics
- Health & Wellness
- Food Systems
- Social Justice/Inclusiveness
- Education
- Transportation

(Note: This symbol denotes potential for Academic integration and/or research opportunities within topic areas)
Energy

Vision
Become Net Energy Positive at Site Scale

Strategic Approach

Near Term
• Benchmark calculations
• Master Plan land use, infrastructure, buildings, phasing
• Develop design guidelines for buildings and infrastructure to be “Net Zero Ready”

Mid Term
• Pilot Bio-mass Co-Gen (or Tri-Gen) plant
• Deploy Solar as appropriate to specific projects

Long Term
• Thermal energy at District Scale
• Achieve Net Zero Energy, transitioning to Net Positive
• Transfer ‘Lessons Learned’ to the High Desert Region about best Bio-Mass and Net Positive Energy practices
Water

Vision

Achieve site scale *water balance*, demonstrating water stewardship of the High Desert environment

Strategic Approach

Near Term

- Implement monitoring & display systems; conservation strategies
- Identify, and research opportunities for water reuse on site and coordinate same with the City and other regulators
- Develop guidelines for “water re-use ready” buildings
- Determine benchmarks; set measurable performance goals over time

Mid Term

- Build pilot systems to test the treatment of storm/grey/black water while also testing non-potable reuse on site

Long Term

- “We won’t use drinking water for anything but, drinking”. All other uses will utilize non-potable water
Waste

Vision
Achieve zero waste to landfill performance

Strategic Approach

Near Term
• Do an academic year 2017/2018 baseline for waste stream
• Adjust procurement policies via review and creation process for all materials (consider creative incentives/disincentives)
• Explore social science and technological solutions
• Set per capita goals and/or - Set baseline relative to other campuses
• Include Construction Waste targets in Design Guidelines

Mid Term
• Pilot Composting Program with local partnership(s)
• Achieve near 100% of all recyclables materials diverted from landfill

Long Term
• Get as close to Zero Waste as technically feasible
Vision
Achieve regionally appropriate carbon neutrality in concert with University’s Net Zero Energy goal

Strategic Approach
Near Term
• Build consortium of University participants to develop carbon accounting protocol(s) and baseline(s)
• Partner with the City on their Climate Action Plan, helping to lead in climate action planning in the region

Mid Term
• Calibrate biomass pilot for emissions reporting
• Measure and report campus carbon emissions across spectrum of campus operations

Long Term
• Develop optimal regional protocols for carbon neutral biomass co-gen operations
• National Leader in campus scale carbon neutrality
Habitat/Ecology

Vision
Develop Campus to be Habitat and Ecologically restorative (Net Positive) over time

Strategic Approach

Near Term
- Conduct baseline species inventory; Identify appropriate species for development context (not all species are compatible); Develop benchmarking for present conditions
- Develop onsite and offsite habitat improvement strategies

Mid Term
- OSU help develop and model First Bat-Friendly Campus
- Coordinate with local partners to develop pollinator habitat onsite to integrate into regional pollinator network

Long Term
- Maintain and improve created habitats
- Monitor species use of habitats and incorporate into virtual database systems for public education
- Demonstrate improvements in functional connectivity for relevant species

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Resilience

Vision
Campus develops and evolves with the ability to respond to changing conditions while maintaining vitality over time

Strategic Approach

Near Term
- Benchmark present condition(s) / draft relevant metrics
- Explore/Define Campus drivers for resiliency
  - E.g. Climate, Disaster, Social, Economic, etc.
- Develop local/regional partnerships

Mid Term
- Draft preparedness and adaptation strategies
- Evaluate metrics, adjust as needed

Long Term
- Central Oregon “Embassy” for diversity and inclusiveness
- Seen as national model for campus resilience, across a full spectrum of categories

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Economics

Vision

University is economically sustainable and resilient over the long term, with *highest value delivered* for both public universities in Oregon, *and for students*

Strategic Approach

Near Term

• Integrate analysis of capex and opex costs/budgets
• Benchmarking (utilize current academics)
• Develop financial success metrics, both for University and for student affordability

Mid Term

• Develop criteria for P-3 and economic cluster relationships, and identify candidate relationships
  • Values based; not-for-profit; lower cost delivery
• Develop “Sustainable Economics” models

Long Term

• Maximizing tuition $$ to invest in the highest and best use (e.g. academic programs), minimized for OpEx.
• Offset long-term opex by leveraging partnerships - Develop these relationships
Health & Wellness

Vision
Become a model campus for integrated Health & Wellness - "you leave healthier than when you arrived"

Strategic Approach

Near Term
• Using regional central Oregon benchmarking
• Participate in wellness benchmarking in Oregon, (both with other Oregon campuses, and regionally)
• Implementation of health coordinator grant and program
• Develop Campus Design Guidelines for wellness
  • Active Design; Biophilic Design; Healthy Materials, etc.

Mid Term
• Intentional Design of built environment to achieve health and wellness goals - Integrated w/ academic programs

Long Term
• Healthiest campus in Oregon based on the health wheel
• Transformative experience is measureable
Food Systems

Vision
Become a model campus for integrated, locally-focused, campus food systems

Strategic Approach

Near Term
- Establish procurement from Local/regional farms
- Establish key partnerships (e.g. COIC)
- Evaluate appropriate scale and goals for on-campus food production
- Develop programs for a diversity of food options and emphasize healthy/sustainable foods

Mid Term
- Connect success metrics to other Sustainability topic areas (e.g. waste/composting, water use, ecology metrics, etc.)
- Food programs integrated into campus curricula

Long Term
- Seen as national model for integrated, locally focused campus food systems
Social Justice/Inclusiveness

Vision
Become a ‘Model’ University Campus for social justice and inclusiveness

Strategic Approach

Near Term
- Benchmarking social resilience in model institutions
- Define who do we mean when we talk about “inclusive to all” (e.g. Latino, First Nation, Veteran, non-traditional, families, international students, economic strata, etc.)
- Develop a campus “Pattern Language” for legibility and inclusivity (e.g. paths, hearths, porches, adjacencies, etc.)

Mid Term
- Establishing what a welcoming campus to diverse groups looks / feels / operates like
- Making residential and commuters feel equally “at home”

Long Term
- Central Oregon “Embassy” for diversity and inclusiveness

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Education

Vision

Become a Model, Place-Based, Living-Laboratory University Campus - offering a transformative experience

Strategic Approach

Near Term

- Develop key metrics and indicators to measure and include means to measure them in the developing campus
- Explore ways that integrated sustainability education provides regional benefits

Mid Term

- Develop feedback mechanisms for individuals and departments, and develop reporting for measured data
- Educational aspects of the campus are available to all who live, learn, work and visit there

Long Term

- Campus is a national model on the incorporation of key campus sustainability metrics into academic curriculum and evolving as a “Living Lab”
Transportation

Vision
Become a ‘Model’ campus for integrated, multi-modal transportation

Strategic Approach

Near Term
• Establish transportation hubs
• Develop policies for measurement and tracking
• Work to Minimize drive alone rates
• Partner with City and regional transportation district to develop community integration of transport systems

Mid Term
• Refining goals for Regional Leadership in Transport Policy

Long Term
• Seen as National Model for University Campus Transport planning

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