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Sustainable Operations at Portland State University: Relevant Organizational Issues and a Path Forward

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Sustainable Operations at Portland State University: Relevant Organizational Issues and a
Path Forward

by

Molly Mae Bressers

A thesis submitted in partial fulfillment of the
requirements for the degree of

Master of Urban Studies
in
Urban Studies

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Abstract

Large organizations such as Portland State University (PSU) play an important role in the environmental impact and sustainability of a city, EcoDistrict and region. Through their resource use and operations, such organizations can assist in mitigating environmental damage, as well as educate their members and community. PSU does not currently have any formal policies that support sustainable operations, and there is room to improve the sustainability of campus operations. Feedback from PSU employees was solicited through two surveys, and these data were qualitatively analyzed to identify salient organizational issues that may serve to inhibit implementation of sustainable operations at PSU. Findings revealed the following: lack of collaboration, connectivity, and information sharing between departments and levels of the organization's hierarchy, and a perceived lack of top-down support in the form of operational sustainability guidance, policies, and resources. The PSU Green Team program and Climate Action Plan Implementation Team (CAP-IT) may offer opportunities to address these shortcomings, and if supported and well-utilized, these existing structures have the potential to promote sustainable operations and EcoDistrict development at PSU.

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Introduction

Since the industrial revolution, human activity in urban areas has put increasing stress on our natural resources and environment. The Millennium Ecosystem Assessment highlighted the fact that during the last 50 years, humans have altered ecosystems in a more rapid and extensive manner than ever before, due to growing demand for food, fuel, water, and other resources. The result has been significant—and largely irreversible—losses to species diversity on Earth as well as severe degradation to many ecosystems (2005). Described by some as the "take-make-waste" system, metropolitan regions have been extracting natural resources at an ever more rapid pace, making those resources into myriad disposable items, and then burying, burning or otherwise throwing “away” that waste in largely non-regenerative ways. Apart from the depletion and pollution of natural resources, this system also creates carbon emissions from the burning of fossil fuels used for energy, and these emissions have been linked to recent changes in climate. Climate change poses a threat to the natural systems on which we depend, as does the degeneration of the resources used to fuel human societies. Because the world’s population is becoming increasingly urban, and putting increasing stress on the limits of those natural resources, working toward a more sustainable, and less wasteful future is particularly paramount for cities.

Large institutions such as Portland State University wield significant influence on the sustainability of a city and region, through their economic, social, and environmental impacts. Due to high levels of resource consumption, businesses, government, and other organizations represent a large portion of the anthropogenic carbon emissions, pollution,

and ecosystem degradation (Stern, 2005). PSU is no exception to this in terms of resource use; for example, in FY 2010, the University consumed 50,369,799 KWH of electricity, 1,166,812 therms of natural gas, 219,359,976 gallons of water, disposed of 2107 tons of garbage (PSU Utility Manager, 2011). Not only does the University consume resources directly, but it also expends resources in the form of the embodied carbon emissions and energy required to produce purchased products and services. For example, the 2010 PSU Climate Action Plan (CAP) estimated that embodied emissions in purchased materials account for 41% of the organization's annual carbon emissions of 42,950 MteCO₂ (CAP, 2010).

Additionally, the University is a unique type of organization that both influences—and is influenced by—the large number of people who work or study within the organization, as well as the surrounding urban and academic environment, through the practices, education, and research in which it engages. The motto of Portland State is, “let knowledge serve the city;” this stated mission of service to the surrounding metropolitan region should also include the organization's impacts on the surrounding natural environment. Such a relationship with the surrounding region makes PSU unique in that it is tasked with setting a positive example, as well as engaging in research and practices that are on the forefront of addressing regional problems. Starik & Rands define a sustainable organization as one engaging in activity that does not alter physical, chemical, biological, or social factors in ways that will dramatically reduce or eliminate the carrying capacity for otherwise sustainable entities (1995: p.909). Furthermore, because ecosystems provide the means for biological systems, and in turn organizations to

ultimately function, preserving ecosystem viability should take priority over economic gains, although the two need not be mutually exclusive (Starik & Rands, 1995). It is imperative we ensure that PSU operates in the most sustainable manner possible, so as to lessen and mitigate the detrimental impacts of human activity on our environment, and emphasize resource conservation, while also setting a positive example for the city.

However, as a University, PSU is different from a typical, non-academic organization; the students and faculty who are integral to PSU as an academic institution play an important role in shaping the course of sustainability that the organization takes. Faculty and students can be both driving forces for sustainable changes, as well as populations who need to be “brought on board” to the cause of a sustainable organization. Through sustainability-related research, education, and the feedback of students and faculty, sustainable operations could be promoted, if these areas are coordinated with the administrators in charge of operations. Coordinating academics and operations around sustainability is something the University is working towards through the “living lab” concept, in which PSU’s campus serves as the test facility for research about sustainable practices and innovation that can be applied to the University itself. This means of connecting operations and academics however, is still developing and evolving, and coordinating the administrative and academic faces of the University will continue to be a challenge that requires attention.

PSU and its immediate environs also make up one of five slated “EcoDistrict” pilot neighborhoods, which are part of an urban planning and community development initiative originally sponsored by the City of Portland, and now facilitated by the Portland

Sustainability Institute (POSI) which seeks to align metropolitan development with the City's longstanding commitment to sustainability. POSI defines an EcoDistrict as "an integrated and resilient district or neighborhood that is resource efficient; captures, manages, and reuses a majority of energy, water, and waste on site; is home to a range of transportation options; provides a rich diversity of habitat and open space; and enhances community engagement and well-being" (Portland Sustainability Institute, 2009: p.1). As the anchor of the South of Market (SOMA) EcoDistrict, the extent of PSU's sustainable operations will play a major role in the success or failure of the initiative. In this way, the EcoDistrict represents a substantial, visible pressure for PSU to perform in the most sustainable manner possible, and a test of whether the organization is truly committed to sustainability.

Furthermore, the University has set for itself many ambitious conservation goals as a part of its 2010 Climate Action Plan (CAP). This plan sets the framework for the University to be carbon neutral by 2040 through a series of goals in such categories as buildings and energy, materials, travel and commuting, and research and education. The plan contains short and long term actions aimed at meeting reduction targets in the above categories which relate directly to the operations of the University. For example, targets include reducing on-site energy demand, reducing the embodied emissions in the products and services purchased by the University, and reducing solid waste generation below set baseline levels. Meeting Climate Action targets would also support the stated goals of the EcoDistricts initiative, most-likely reduce operating costs for the University, and allow PSU to show its commitment to being a green organization in both research

and practice.

In order to lessen PSU's environmental impact, align with the goals set by the CAP and meet the challenge of the EcoDistricts initiative, however, it is vital to understand what might influence, promote, or inhibit the adoption of practices that support sustainable operations. Operating sustainably means functioning in a manner that reduces an organization's use of resources such as water or energy, generates less waste, and reduces the carbon emissions associated with purchased goods and services. Examples of practices that support sustainable operations include double-sided (duplex) copying and printing, computer and monitor power management (sleep, standby) settings, waste reduction through reuse, recycling, and composting, and purchasing goods made with recycled and renewable materials. Currently, PSU lacks a formal resource conservation policy that mandates such practices, although many practices (computer power management, duplex printing) could be implemented through top-down directive at the department, building, or campus-wide scale by the Office of Information Technology (OIT), or the Business Affairs Office (BAO) through more centralized purchasing policy and implementation guidelines. This research seeks to identify characteristics of the organization that might inhibit or promote sustainable operations, and also to identify opportunities within the organization for forward progress on sustainability.

Literature Review

How did we get to this point of un-sustainability? A useful backdrop for understanding the evolution of cities as intensive natural resource users, as well as to the development of large, rational, bureaucratic organizations can be found in the empiricist and rationalist scientific traditions borne out of 17th century enlightenment science. Renee Descartes introduced the Cartesian Coordinate system, characterized by empirical analytic thought and the use of mathematics to understand nature, which was studied as a machine made up of separate, functional parts. Within this theoretical orientation, the *separation* between mind and matter, or nature and culture was paramount (Jelinski, 2005).

The natural environment, reduced analytically to its separate functioning parts, was then understood as something separate from superior human society, and was thus *controllable* by humans who could “render ourselves as lords and possessors of nature” (Descartes, 1637). Indeed as O’Brien (2002) and Vining et al. (2008) point out, the dichotomization of nature and culture during the Enlightenment gave humans license to dominate and master the natural world. This scientific orientation and worldview can be seen as antecedent to the rapid increase in scientific innovation that fueled the industrial revolution. Over a period during the 18th and 19th century, scientific advances in technology, agriculture and manufacturing spurred rapid, unprecedented economic growth and geographical expansion within Europe and the United States, fueled by the exploitation of previously untapped natural resources. This in turn fueled an increase in urbanization that continues to this day (LeGates & Stout, 2007).

Cities, in this light, can be seen as a manifestation of human dominion over and separation from, the natural environment—the outcome of a desire to control and protect ourselves from the harsh and unpredictable forces of the natural environment. Embedded in the process of urbanization are the ideals of the Enlightenment: that humans are somehow separate from and superior to the ecosystems on which life depends. We have built our cities accordingly and continue to use natural resources with this exploitative mindset, often not seeing or understanding our impacts. For example, the provision of energy to cities is largely invisible; power plants, mines, and oil wells are located far from the centers of end use, and even those facilities within the city that provide energy are largely hidden from view (Lutzenhiser, 2002). The cultural and ideological “baggage” of our perceived separateness from the environment has important ramifications for both our current state of un-sustainability, and the effort to improve on “business as usual.”

The development of large, bureaucratic institutions as part of the urban fabric is also rooted in this reductionist, rational orientation. Max Weber depicted bureaucracies as the organizational manifestation of a rational mindset (1968). Organizations are divided into functional departments, with each part attending to separate functions of the whole organism. In this way, human societies have separated themselves firstly from the natural environment, and further from connections to each other into organizational compartments. This separation is relevant for sustainability efforts. These rationally regulated bureaucratic structures were, according to Weber, hierarchical, and their separate divisions reinforced differing levels of domination and power. The formation and function of these bureaucratic structures were driven by competition and the need for

efficiency within the capitalist system (Weber, 1968).

DiMaggio & Powell (1983) argued however, that although the bureaucratization and rationalization of the state and commercial sectors is complete, and that bureaucracy is indeed the most common organizational form, efficiency and competition are no longer the driving forces of organizational change or formation. Instead, organizations are becoming more homogeneous, often at the expense of efficiency. To DiMaggio & Powell, this “organizational isomorphism” is the result of coercive, mimetic, or normative mechanisms that drive organizations to become more alike, yet not necessarily more efficient.

Efficiency in use of natural and financial resources is a central tenet of an organization’s sustainable operations. However, while organizations may have formed out of a rational ideology to maximize efficiency, much research has found that when it comes to sustainable, efficient use of resources such as energy, large organizations tend *not* to act rationally or in accordance with economic models based on maximizing efficiency and minimizing costs (Biggart & Lutzenhiser, 2007; Cebon, 1990; Weber 1999).

For example, Cebon pointed out that decisions about energy conservation in organizations tended to be shaped more by the organization’s structure, and that distribution of power, and acquisition of information, as opposed to cost-benefit analyses, were relevant (1992). Biggart & Lutzenhiser highlighted that energy use in buildings, while easily improved, tends to be rather wasteful and expensive, and organizations fail to make even small, easy investments in efficiency or conservation. Division of labor,

organizational arrangements, and decision-making capabilities of organizations can contribute to failures to evaluate, act, and decide on conservation measures (2007). In an investigation of Swiss firms, Weber found that 86% of all events that decreased energy consumption were not the result of direct conservation measures, nor the result of explicit decisions to save energy (1999). Therefore, the literature suggests that arrangements and relationships within an organization's structure indeed matter when it comes to sustainability.

Top-down support, full commitment from upper management, along with collaboration, employee culture, and understanding the relationship between technical and managerial elements were found by Brown & Key to be integral elements of an organization's successful commitment to energy master planning (2005). The authors state that an organization's readiness for strategic energy management depends on business viability, employee culture and willingness to change, and level of technical documentation and control (Brown & Key, 2005).

Bob Doppelt (2003) identified "seven sustainability blunders" that organizations tend to make at the expense of sustainability, including: patriarchal thinking, a silo approach to issues, lacking a clear vision for sustainability, confusion over cause and effect, lack of information, insufficient mechanisms for learning, and failure to institutionalize sustainability. Through research of 25 private and public organizations, Doppelt found that one or many of these seven "blunders" could often explain the limited or non-existent adoption of sustainability measures within organizations.

An organization's structure and functioning have important ramifications for its

capacity to make changes toward more sustainable operations. In his influential book, *The Fifth Discipline*, Peter Senge connected our tendency to fragment, and break things apart in order to understand them, with the dysfunction of organizations. Only by seeing through the illusion that the world is not made up of separate and unrelated forces, but connected pieces of a whole, can organizations adapt and change for the better. “When we give up this illusion—we can then build “learning organizations,” organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set, and where people are continually learning how to learn together” (Senge, 1990: p.3). In this way, fragmentation of an organization may be linked to its inability to engage making changes, and for employees to receive information and guidance needed for enhanced sustainability.

Donella Meadows’ influential writing on systems reminds us that a system’s behavior is largely a function of the *connections or relationships* between elements in the system, rather than the individual elements themselves. In changing the outcomes of a system, it is those connections that must be attended to, and rearranged in ways that alter relationships and feedbacks (Meadows, 2008). This leads us to wonder how the arrangement of people within an organization and their relationships will affect behavior, and their ability to make changes towards more sustainable ways of functioning.

Prugh et al. (2000) likewise highlight that engagement in collective decision-making processes is essential for a more sustainable future, pointing again to connectivity and information sharing. While organizations such as PSU were not necessarily designed

to operate as democracies, these authors' arguments suggest that when an organization's structure prevents engagement, it may likely present a barrier to sustainable operations. Perhaps if organizations functioned more like democracies, with members who are engaged and able to collaborate in collective decision-making, they would be more adaptable and capable of being the "learning organizations" that Senge proposed, capable of making the big changes needed for sustainability. Finally, Starik & Rands note that an "ecologically sustainable organization" has budgeting, reward, and communication systems, organizational structures, and decision-making processes that empower individuals to engage in innovation that is sustainably oriented (1995: p.920).

Research Questions

The reviewed literature suggests that the tension between separation and connectedness is an important theme in our struggle to live more sustainably, or within the bounds of our planet's resources. Ecosystems depend on feedback mechanisms between organisms for their mutual survival, and eliminating those feedbacks through a perceived but unreal separation from nature has led us to a wasteful present-day relationship with our environment. The literature also suggests that the arrangements within an organization or its structure *do matter* when it comes to promoting sustainability and conservation. According to the literature, important organizational issues for sustainability include: top-down support, sharing and distribution of information, distribution of power and decision-making, connections between functional units, and engagement in learning and collective decision-making (Cebon, 1990, 1992; Weber, 1999; Biggart & Lutzenhiser, 2007; Brown & Key, 2005; Doppelt, 2003; Senge, 1990; Meadows, 2008; Prugh et al., 2000). If organizations are a collection of moving parts, how those parts relate to one another, how they are connected or disconnected, collaborative or discrete, will likely play a role in the success or failure of initiatives for sustainable operations.

Portland State University (PSU) is known for its focus on sustainability, and is well-placed within a city that is also lauded for taking green initiatives. The primary, intended “products” of the organization—education, academic programming, and research that serve the city and region— show a strong sustainability bent, and are impressive when compared with other higher-learning institutions. However, taken as a

living, breathing, waste-creating organization comprised of buildings and people, it is not clear that PSU is operating in a manner that matches its intellectual passion for sustainability. Highlighting this deficiency is PSU's recent rating by the nationally recognized STARS (Sustainability Tracking and Rating System), run by the Association for the Advancement of Sustainability in Higher Education (AASHE). Although PSU earned a Gold rating in 2011, the University only received 46% of possible points in the operations category, yet in education and research, 79% of possible points were earned. Likewise, the University lacks any official resource conservation or sustainability policy that sets guidelines for reducing waste, energy and water use, and carbon emissions. For example, a study done by the Campus Sustainability Office (CSO) in 2008 revealed that over 30% of the paper purchased on campus was virgin fiber, or contained no recycled content. Currently departments may purchase whatever products they want, regardless of recycled content or origin, making tracking and setting baseline goals very difficult. There is currently only a loose patchwork of buildings or departments with computer power management settings or motion detector lighting, and no policy to guide implementation.

In other words, work remains to be done before PSU could be said to “walk the talk” of sustainability, a “talk” at which that the University has become quite adept. Furthermore, increasing the sustainable operations of the University is also vital for several other reasons:

- PSU's location in the green-renown Portland, the University's own reputation for sustainability

- placement at the center of an EcoDistrict whose success will depend in large part on PSU's sustainable operations
- internal Climate Action Plan(CAP) goals, and
- PSU's purpose as an educational institution, tasked with preparing the next generation to be successful contributors to the future of our cities and planet.

The purpose of this research is ultimately to clear a path for PSU to realize increasingly sustainable operations that support CAP and EcoDistrict goals, as well as live up to its reputation as a “green” institution. In light of the literature, clearing that path would be well-served by an understanding of current conditions within the organization: how do organizational factors at PSU and the relationships within the organization either inhibit or support adoption of the practices that enable sustainable operations? Are there characteristics of the organization’s structure and functioning that might serve to inhibit the development of policy and resources that support sustainable operations? Do we find evidence of important organizational factors identified in the literature such as separation, power and decision-making capabilities, distribution of information, connections, or fragmentation between actors and departments? In other words, what organizational factors exist that may be related to why PSU has not progressed on institutionalizing sustainable operations in a way that matches its reputation and academic focus on sustainability?

Moreover, this research seeks to illuminate current on-campus efforts to which PSU could look for assistance and support in developing sustainable operations. What

existing organizational opportunities or past efforts might PSU harness to encourage sustainable operations to operate most sustainably, meet internal Climate Action goals, and live up to the requirements of successful EcoDistrict? The Green Team program at PSU fosters employee engagement, departmental implementation, and education around sustainable operations within PSU departments. Staff and faculty on green teams serve as their department's resource for adopting practices that contribute to University stewardship goals, and these employees might provide on-the-ground implementation support for sustainability policies, as well as a network of communication and information sharing. In addition, the Climate Action Plan Implementation Team (CAP-IT) formed after the completion and signing of the PSU Climate Action Plan in May of 2010, may provide opportunities for campus decision-makers to share information and expertise in ways that support development of realistic, implementable sustainability policies. Composed of staff members from across PSU departments, CAP-IT is an advisory body to the Campus Sustainability Office (CSO) that oversees the implementation of strategies designed to meet the goals contained in the 2010 Climate Action Plan (CAP). Both of these groups will be considered as opportunities to further sustainability at Portland State.

In focusing on larger organizational factors, rather than individuals at PSU, this research aligns with others who argue that human resource use as a behavior (for example, energy consumption) is ultimately a social act, governed and limited by larger societal and organizational systems Lutzenhiser (1993), Wilhite et al. (2000), Summerton (1992). This research will look at the relationships between individual actors and among

departments, the connections whose presence allow for collaboration and information sharing, as Meadows (2008), Doppelt, (2003), and Cebon (1992) argue are important to consider with regard to sustainability. Other authors (Stern, 2005 and Wilson & Dowlatabadi, 2007) also mention the importance of social context when attempting to understand and change human behavior towards the environment; only in situations where outside, contextual influences are weak will individual factors be significant. Contextual factors are likely very strong within a bureaucratic organization such as PSU. Although individual factors may also be relevant, and indeed have received more research attention, in this case, separating the individual from the system in which he or she functions as a means of understanding behavior may be an unrealistic endeavor with limited usefulness. It is also outside of the scope of this research. Therefore, this research seeks to assess characteristics of the PSU as a social context that may be related to inhibiting or promoting sustainable operations.

Methods

If the organization is a social context in which individual actors behave and relate to one another, and according to the literature these arrangements can affect the operations of the institution, understanding the experience and perceptions of those actors as they participate in the effort towards sustainability is important and potentially revelatory. For this research, the survey data were chosen because they surveyed employees that were more directly involved in sustainability programs, or in the purchasing of supplies for the University, and because the surveys both asked participants to reflect on PSU as an organization and whether it promoted or inhibited sustainable practices. Data from two surveys of University stakeholders administered by the Campus Sustainability Office (CSO) were used: a survey of employee purchasers on campus, and a SWOT (strengths, weaknesses, opportunities, threats) survey of stakeholders within the sustainability effort.

Qualitative analysis was selected for two reasons: first, the nature of the survey responses did not support statistical analysis, as the responses are largely open ended or qualitative in nature, sample sizes were small, and samples likely contained some bias. Second, in an effort to illuminate relevant organizational factors, qualitative analysis offered a more in-depth and authentic glimpse into the experience and perceptions of stakeholders at PSU. For those that work within sustainability programming, what is it like to work in this organization? What works well and what does not? Similarly, for those who purchase supplies for their department, in terms of making “greener” purchases, the survey addressed: what is this experience like, and what support may be

needed?

Specifically, content analysis was used to distil meaning from the data. Berg has defined content analysis as “a careful, detailed, systematic examination and interpretation of a particular body of material in an effort to identify patterns, themes, biases, and meanings (2007: p.303-04). In this case, the body of material analyzed included the SWOT and Green Purchasing surveys. Content analysis was used to identify patterns of themes and meanings within employee responses, related to the research questions about organizational factors that affect sustainable operations.

SWOT survey:

In the winter of 2010, the Campus Sustainability Office sent stakeholders within the sustainability effort at PSU a link to a Google Docs questionnaire, asking: “please help us perform a SWOT (strengths, weaknesses, opportunities, threats) analysis of the overarching sustainability effort on campus. When responding, please think about the larger sustainability working group and program, not just your office” (See appendix A). This survey was distributed via various sustainability and green team email list-serves, the PSU Eco-Wiki web page, and the Eco-Wiki Bulletin. The survey generated 27 responses, and those data were qualitatively analyzed through content analysis. Survey responses were read closely four times to arrive at grounded themes. The first reading allowed for a general understanding of responses to all four question areas. During the second reading, the data were analyzed for common, repeating ideas or concepts, which then were grouped into general coding categories in a third analysis. During the final

stage of analysis, data fragments were grouped according to their representation of any previously-identified thematic categories. Occurrences for each of the repeating themes were then counted for frequency. Open coding was used to sort the survey data fragments within those themes, meaning that codes were generated based on the concepts found grounded in the data.

Word clouds, graphic representations of the responses were also generated using <http://www.wordle.net>. Text from responses under each main category were inserted into the web-based tool, with words such as “sustainability,” “sustainable,” “PSU,” and other common, yet not specifically descriptive or revelatory words omitted. Words with most frequent mention appear larger in each word cloud for *strengths, weaknesses, opportunities, threats* (see figures 1-4).

Green purchasing survey:

In the fall of 2010, the Campus Sustainability Office conducted an online survey of employees who purchase goods on campus, to gauge needs and perceptions, as well as the barriers experienced by this group of stakeholders with regard to green/sustainable purchasing. The survey generated 71 total responses, 55 of which were staff members, eight faculty, and eight administrators. Responses to pertinent questions were used for the purposes of this research—those that addressed barriers to sustainable purchasing on campus, and the needs of employees purchasing products for the University. Survey questions included 10 response options each, one in which participants ranked their responses, and another in which participants were asked to mark all responses they

considered relevant. Each response out of the 10 options with frequency greater than or equal to 15% was reported. Because responses were not open-ended, frequently-mentioned responses were analyzed for their alignment with grounded themes, and were counted for frequency as a proportion of all responses. For example, the frequently given response “lack of clear policies and guidance” displayed both *top-down support* and *distribution of information* themes.

For both surveys, grounded themes were developed inductively, based on rigorous analysis and repeated readings of the survey data. Grounded themes were those present among numerous responses in the SWOT survey data, or in frequently-chosen responses of the purchasing survey, as well as those that demonstrated a connection to organizational issues found in the relevant literature. Those identified as grounded themes were concepts that appeared repeatedly throughout various participants’ survey responses, rather than simply any concept present in the data. During analysis, a few integral, recurring themes became evident that were also identified by the literature as important organizational factors relating to the sustainability/un-sustainability of an organization (Cebon, 1992; Brown & Key, 2005; Doppelt, 2003; Senge, 1990, Biggart & Lutzenhiser, 2007; Senge, 1990; Starik & Rands, 1995; Meadows, 2008). The grounded themes were:

Grounded themes:

- **Collaboration, coordination & connectivity** or the absence thereof: **fragmentation, silos, and separation**
- Related sub themes:
 - **Engagement**
 - Top-down support
 - Bottom-up support
 - **Empowerment**

- Distribution of
 - **Information**
 - **Decision-making capabilities**
 - **Power**

Existing Efforts, Green Teams and CAP-IT

Finally, the PSU Green Team program, as well as the recently-founded Climate Action Plan Implementation Team (CAP-IT) were considered as existing structures within PSU that may relate to and address relevant organizational issues, and may offer support to sustainable operations of the university and development of the surrounding South Market (SOMA) EcoDistrict. Data regarding these two efforts were collected via participant observation during 2010 and 2011, as well as examination of documents pertaining to the efforts. Attending numerous Green Team and CAP-IT meetings, observations were made that allowed this research to include a more detailed account of the purpose and functioning of both Green Teams and CAP-IT. Documents analyzed included a Green Team website (ecowiki.pdx.edu/greenteams) and brochure, and for CAP-IT, the group's foundational document explaining their purpose and membership. In subsequent analysis reported in the discussion section, these two programs were considered through the lens of the grounded themes to understand how these efforts might encompass organizational issues such as separation, connectedness collaboration, information-sharing, engagement, or empowerment.

Results

SWOT Survey

Within the “strengths” category, the only theme found recurring in numerous responses was that of *collaboration & connectivity*. Four of 27 respondents, or 15% made statements that reference the themes of collaboration & connectivity as a strength of PSU’s sustainability effort. Two of those four instances were with regard to community, city, and regional partnerships or support, not collaboration and connections within PSU. For example, respondents made statements such as “*good partnerships with City of Portland,*” “*we are situated in a region that provides us with a fair amount of support (citywide recycling, composting, as well as local expert knowledge, etc),*” and “*community and community partners—city, state, county, non profits, businesses and community in general who support and promote our sustainability work at PSU.*” In reference to the recent co-location of sustainability offices at PSU, one participant noted: “*having leadership and a central office location for the first time has given us the ability to network and build our initiatives much more efficiently.*” This statement suggests that the participant found value in connections to other departments that proximity offers. Overall, the references to collaboration and connectivity as strengths referred both to internal and external relationships.

one participant stated *“The lack of coordination between the Sustainability folks and the greater campus is apparent in the varying degrees to which offices/departments implement sustainability practices.”* Furthermore, the following statement outlines the way in which silos can be a threat to sustainability efforts: *“the continued lack of coordination of resources, departments, etc. within the university. Siloed projects that are not done in connection to broader sustainability goals. An increasing state of polarization due to different definitions and approaches to problems.”* In this response we see how the divergent definitions, approaches, and goals of departments may not have been unified around sustainability, or around any common purpose, making it difficult to leverage combined resources for progress. Another participant's comments reflected the themes of *top-down support and engagement*: *“not enough specific and consistent direction from decision makers; not making sustainability a priority that everyone participates in.”* Again reflecting that *distribution of information* matters, a participant mentioned *“people all need to be on the same page regarding the services and resources that exist on campus. I think the degree to which misinformation exists hurts our sustainability efforts. People don't know what they can and can't do in terms of recycling, where and what they can, and who they contact for a specific need.”*

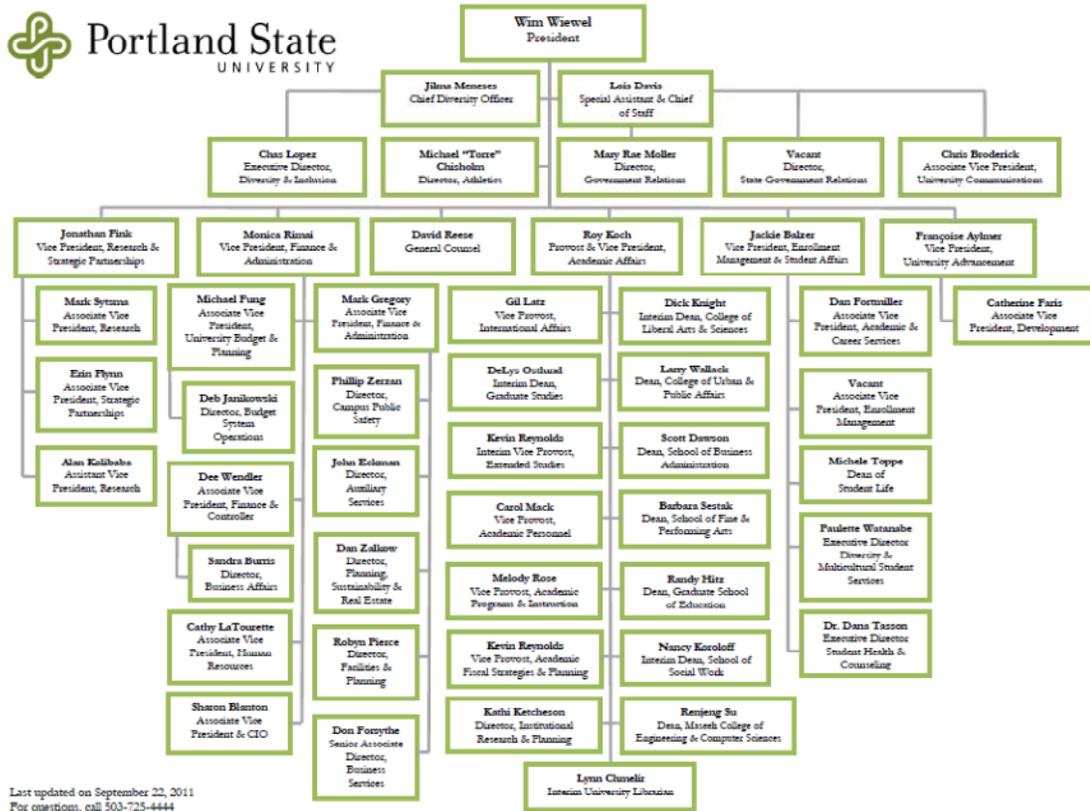
affected the University's ability to progress on sustainable initiatives. This was congruent with the literature (Meadows, 2008; Senge, 1990; Doppelt, 2003; Prugh et al., 2000). Based on participant responses, it seemed that silos between different functional areas of PSU (departments) presented a problem because those departments have developed distinct goals, methods of communication, and purposes that do not necessarily overlap. Making a campus run more sustainably however, would require collaboration between all or most campus departments, and adherence to commonly-shared goals about sustainability. This suggests that sustainability may need to be imbued *within* the goals and purposes of all departments, rather than existing as a separate function, one of many departments. Moreover, many responses implied that there are multiple, disparate efforts around sustainability at PSU, and that those efforts should be more unified and cohesive to provide maximum potential. Therefore, it may be both a matter of infusing the campus with common goals, and of increasing collaboration by unifying existing efforts. Participants did see potential and opportunity to leverage community connections, students, and inter-organizational collaboration, but the old model that separates organizational functions seemed to pervade respondents' current perceptions of the University.

Furthermore, the SWOT word clouds revealed that dominant responses in the two negative categories, "weaknesses" and "threats" revealed different factors, or dimensions of the University than the positive "strengths" and "opportunities" categories. Under "strengths" we saw the terms *faculty*, *community*, *students*, *Miller* (referring to the Miller grant for sustainability research and education) and *research*. Under "opportunities"

students is the most prominently mentioned term, followed by *community*, and *practice*. Overall, these response categories were dominated by factors from the academic side of the University. However, under the negative “weaknesses” and “threats” categories we found more operational or administrative terms mentioned such as *campus*, *departments*, *effort*, *practices*, *lack*, *support*, *budget*, and *motivation*. The division between responses to these prompts reflected the discrepancy between PSU’s academic and operational sustainability performance, as mentioned earlier, and evidenced in the STARS rating. Moreover, these results suggested that those surveyed see the *problems* PSU faces with regard to sustainability as related to a different dimension of the University than their *solutions*. In other words, while the weaknesses and threats to sustainability on campus may be seen as largely administrative and operational, the strengths and opportunities mentioned were largely related to PSU’s academic side: students, faculty and research, (along with community partners). This mismatch suggests that a better understanding of how to engage and utilize the academic aspects of the University (seen as strengths and opportunities) as a means of addressing PSU’s sustainability shortcomings is essential.

The PSU organizational chart can help to illustrate the two silos of administration and academics; there are no horizontal links (or lines) between the employees listed below Roy Koch, Provost and Vice President of Academic Affairs, and Monica Rimai, Vice President of Finance and Administration. While of course connections may exist that are not visible on this chart, the overall model of the University does seem to perpetuate the disconnect between academics and administration, which was highlighted in the SWOT word clouds.

Figure 5: Portland State University Organizational Chart



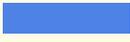
Last updated on September 22, 2011
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Purchasing Survey

When asked to select which factors they felt were barriers to green purchasing at PSU, 92% of participants noted cost, the most popular response, and not a surprising factor. Second to cost as a perceived barrier, “lack of clear policies and guidance” was noted by 56% of participants, and this reflected the grounded theme of *top-down support*, as such policies and guidance would come from the University administration. “Time to search for green products” (48%), “personal lack of knowledge” (32%), and “lack of high level university support” (24%) were other frequently-selected factors, suggesting that

distribution of information, as well as top-town support were salient barriers to surveyed employees.

Table 2: Which of the following do you see as potential barriers to green purchasing at PSU?

	Answer		# Response	%
1	Availability of Green Products		20	30%
2	Quality or Performance Perceptions		24	36%
3	Cost		60	91%
4	High Level University Support		15	23%
5	Personal Lack of Knowledge		22	33%
6	Time to Search for Green Products		31	47%
7	Lack of Banner support		7	11%
8	Lack of Clear Policies and Guidance		36	55%
9	Colleagues with Negative Perceptions About "Green"		5	8%
10	Other barriers or any solutions that could help us address these barriers.		5	8%

Participants were also asked to rank a list of resources that would support them in making greener purchases. The most-common resources ranked first in order of importance (1=most important, 10=least important) were:

- “Checklists that help you identify sustainability attributes when shopping for products” (19%).
- “Purchasing standards and guidelines that are clear and easy to follow” (18 %).

- “Web resources such as product guidance, contracts, things to avoid and vendor information” (18%).

Together with “list of contracts containing green products and services” (12%), the above three resource options represented over two thirds of the first-ranked resources (~67%).

Resources most frequently ranked *second* in order of importance included “list of product alternatives that meet sustainability criteria” (21%), “purchasing policies that establish formal standards for products” (17%) and Purchasing standards and guidelines that are clear and easy to follow (15%) (See table 3).

Table 3: Resources PSU could provide that would help you make greener purchases

	Most important					Least Important				
Answer	1	2	3	4	5	6	7	8	9	10
Checklists that to identify sustainability attributes when shopping for products	19.70 %	13.64 %	15.15 %	21.21 %	13.6 4%	6.06 %	4.55 %	4.55 %	1.52 %	0.00 %
Faculty and/or student research to help assess costs/benefits or alternatives	3.03 %	7.58%	6.06%	9.09 %	13.6 4%	13.64 %	16.67 %	10.6 1%	18.1 8%	1.52 %
List of contracts containing green products and services	12.12 %	7.58%	12.12 %	13.64 %	12.1 2%	19.70 %	7.58 %	7.58 %	7.58 %	0.00 %
List of product alternatives that meet sustainability criteria	6.06 %	21.21 %	21.21 %	13.64 %	12.1 2%	12.12 %	13.64 %	0.00 %	0.00 %	0.00 %
Other (please specify)	1.52 %	0.00%	0.00%	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	98.4 8%
Purchasing policies that establish formal standards for products	9.09 %	16.67 %	12.12 %	7.58 %	13.6 4%	7.58 %	21.21 %	1.52 %	10.6 1%	0.00 %
Purchasing standards and guidelines that are clear and easy to follow	18.18 %	15.15 %	12.12 %	7.58 %	9.09 %	10.61 %	13.64 %	13.6 4%	0.00 %	0.00 %
Training (specific/detailed info)	3.03 %	4.55%	1.52%	4.55 %	7.58 %	3.03 %	6.06 %	16.6 7%	53.0 3%	0.00 %
Trainings (basic info)	9.09 %	3.03%	9.09%	6.06 %	4.55 %	7.58 %	12.1 %	40.9 1%	7.58 %	0.00 %
Web resources	18.18 %	10.61 %	10.61 %	16.67 %	13.6 4%	19.70 %	4.55 %	4.55 %	1.52 %	0.00 %

These results indicated that surveyed PSU employees facing green purchasing decisions were seeking support from the University in the forms of increased information, policies and guidance that would assist them in making sustainable purchases. These barriers represented a perceived need for *top-down support*, one of the grounded themes found during analysis. Moreover, the grounded theme *distribution of information* was also readily apparent in these data.

Discussion

Feedback from two Campus Sustainability Office (CSO) surveys revealed that employees perceived several issues to be relevant to implementing more sustainable operations at PSU. In terms of the purchasing survey, organizational issues such as lack of *top-down support* and *distribution of information* were both apparent themes grounded in the data, reinforcing arguments made in the literature (Cebon, 1992; Brown & Key, 2005; Doppelt, 2003; Senge, 1990, Biggart & Lutzenhiser, 2007). The responses to the SWOT survey clearly revealed *fragmentation, silos, and separation* as a relevant theme (or weakness of the sustainability effort). *Collaboration & connectivity*, while mentioned less frequently in the SWOT survey, was mentioned as an opportunity to improve sustainability efforts at PSU. These results reflected certain organizational characteristics that were seen by survey respondents to impede sustainability, and were congruent with much of the literature on improving efficiency or sustainability in organizational operations (Cebon, 1992; Brown & Key, 2005; Senge, 1990; Starik & Rands, 1995, Doppelt, 2003; Meadows, 2008).

Results of the purchasing survey revealed issues related to the structure of PSU as an organization—who has authority to make recommendations and policy, and to distribute resources or information. A great deal of information and informational resources are required to educate employees about sustainability and why the “take make waste” or business as usual paradigm is flawed. Furthermore, employees making departmental purchases seemed to be waiting for guidance or top-down support for decisions. The purchasing survey results again indicated that many surveyed employees

were seeking the information necessary to weigh options and make sustainable choices. These results echo much of the literature: lack of information-sharing, the importance of information distribution, top-down support, and power/decision-making capabilities are relevant organizational issues for sustainability (Cebon, 1992; Brown & Key, 2005; Senge, 1990; Starik & Rands, 1995, Doppelt, 2003; Meadows, 2008).

Fragmentation, silos, and separation between departments are problematic because they tend to perpetuate business as usual, which is often operating unsustainably, or without regard for resource conservation. In such an environment, each department is assigned a specific function, and thus sustainability tends to be seen as a special project—not traditionally part of those central functions, not budgeted for, and not usually a topic that spans all departments' purpose (Doppelt, 2003). For example, sustainable operations and the development of supportive policy would require the buy-in, staff time, and potentially budget allocations from PSU's Facilities, Purchasing, Transportation, and other departments. Furthermore, the Sustainability Office at PSU has historically been a lone actor tasked with "greening" the University's operations. The separation between departments makes the necessary collaboration difficult, and this was demonstrated by responses in the SWOT survey.

Additionally, silos can prevent the learning and information sharing that the green purchasing survey respondents were asking for, and that Senge (1990) argued were important for a learning organization. Just as Meadows (2008) argued, it is the relationships between elements in a system that ultimately determine its behavior and functioning, and if these relationships are not programmed for collaboration and

information-sharing, sustainability will suffer. Sustainability is not a topic that fits well within the rational paradigm of separate functions upon which organizations were formed (Weber, 1968). Just like an ecosystem, sustainability requires connections and feedbacks between actors. Sustainability should be embedded as a *feature* of all departments' functioning and purpose, rather than a discrete concept.

Fortunately, in taking steps to address the organization's salient issues, PSU may be able to look within itself for opportunities to proceed. Two existing structures at PSU address some of the issues noted by survey respondents, and support movement towards a more sustainable PSU: the Green Team Program and the Climate Action Plan Implementation Team (CAP-IT). The following sections will describe these two existing structures and how they present opportunities to support sustainable operations and the challenge of EcoDistrict development.

PSU Green Team Program

The Green Team program began in 2008 as a pilot program aimed at fostering engagement and education around best practices for sustainable operations within PSU departments. Staff and faculty on green teams serve as their department's resource for adopting practices that contribute to university stewardship goals. Areas of focus for Green Teams include energy conservation measures, green purchasing, commuting, waste prevention and recycling efforts. Most Green Teams meet on a monthly basis, and each quarter, members from across campus are invited to an all-Green Team meeting. During quarterly meetings, members from various departments are able to share project

ideas, successes, and barriers to implementing sustainable operations, as well as learn new information and receive updates from around campus. Green Team members are departmental leaders who also guide Campus Sustainability Office (CSO) staff in providing necessary resources and support for departments. Currently, Green Team members are seen by the CSO as one of the most important conduits for implementing campus sustainability goals, such as those outlined in the Climate Action Plan (CAP).

What began as a grassroots effort and pilot program has developed into a more robust and institutionalized program over the years. Currently there are 22 active Green Teams throughout the University, representing both departments, and whole buildings in the case of the Urban Studies, Academic & Student Recreation Center, and Market Center Buildings. In May of 2011, the CSO held a Green Team Appreciation event during which the program officially transitioned from a pilot project into an institutionalized effort. President Wim Wiewel and Associate Vice President of Finance and Administration, Mark Gregory spoke to green team members and their supervisors about the importance of their work, and expressed their support for green teams. This event represented an important step towards top-down support for the largely grassroots and bottom-up effort that is the Green Team Program.

The Green Team program embodies the themes of *engagement* as well as *collaboration, coordination, and connectivity*. A central purpose of the program is to engage interested PSU employees in sustainable operations, encouraging them to be empowered as stewards of the University's resources and take part in a collaborative effort to "green" the campus. Currently, departments with Green Teams exhibit increased

implementation of many sustainable office practices. Any future policy to address sustainable operations at an organization-wide scale would be well-served by the examples already being set by these departments, and by the employee support for implementation of green operations that these engaged staff leaders could provide. Green Teams are at present the main embodiment of sustainable operations at PSU, and thus empowering those individuals to do more good work will supplement the effort, and could potentially spread to those departments and employees who are not currently engaged.

Quarterly all-Green Team meetings are a time to increase communication, information sharing, and connections between departments, breaking through the silos that are apparent throughout the University. During meetings, members are able to hear about similar, sustainability-related issues, successes or challenges faced by others in departments with different functions, budgets, and demands. This form of sharing can help address the challenge of embedding sustainability within all facets of the organization. Despite the departmental differences that may serve to perpetuate silos, sharing information within this context can begin to break down those walls, and illustrate that we can still learn from each other's efforts, and possibly support or enhance them. In this way, PSU embodies some characteristics of what Senge called a “learning organization” (1990).

Finally, the Green Team program is a form of *bottom-up support* for sustainable campus operations—staff and faculty from multiple departments that are working at the department level to implement best practices that support larger conservation goals of the

University. These teams now work in an environment without a unifying sustainability or resource conservation policy. However if such a policy were developed, Green Teams would be integral to successful implementation because they consist of employees who are more engaged, knowledgeable, and able to offer on-the-ground support to successful sustainability policy and procedural implementation. Green Team members would be available to make sure departments are acting in accordance with University policy—to essentially be the foot soldiers for policies/procedures that require employee compliance and buy-in. For example, a policy that required all offices to purchase certain sustainable products, to recycle toner cartridges, or shut down all electronics at night would require individual department staff to take action in order for those behaviors to happen. Green Teams are groups of employees that could spearhead such action. In conclusion, the Green Team Program has the potential to address the organizational issues of *silos and fragmentation*, as well as lack of *engagement*, helping to improve distribution of information and connectedness among PSU departments.

Climate Action Plan Implementation Team (CAP-IT)

CAP-IT was formed in early 2011, after the completion and signing of the PSU Climate Action Plan in May of 2010. Composed of staff members from across PSU departments, CAP-IT is an advisory body to the Campus Sustainability Office (CSO) that oversees the implementation of strategies designed to meet the goals contained in the 2010 Climate Action Plan (CAP). Such strategies include various activities that result in greenhouse gas reductions in the areas of building energy use, materials consumption,

travel, and commuting. CAP-IT sets priorities and interim goals, establishes metrics to track project performance, creates and manages financing strategies, distributes funds, evaluates effectiveness of strategies, lobbies for institutional buy-in of strategies, and informs annual progress report. Funds for CAP-IT projects are intended to come from savings associated with reductions in resource or energy use, which will usually be joint efforts between departments represented on the team. In this way the team will essentially be funded by its own success.

CAP-IT consists of several subcommittees, each of which represents one section of the CAP: Buildings & Energy, Travel & Commuting, Materials Management, EcoDistrict Development, and Research & Education. CAP-IT members include high and mid-level administrators with expertise in various subcommittee areas of focus:

- Auxiliary Service (AUXS) Executive Director (chair)
- Institute for Sustainable Solutions Sustainability Partnerships Coordinator
- AUXS Senior Associate Director for Finance
- Facilities & Planning (FAP) Associate Director for Finance and Business Services (Finances)
- Associate Vice President for FADM
- Vice Provost for Academic Fiscal Strategies and Planning
- Campus Sustainability Office Manager
- FAP Utilities Manager
- Transportation & Parking Services Manager
- Business Affairs purchasing contracts officer
- FADM Assistant Director for Real Estate and Capital Planning

CAP-IT thus, is responsible for creating policies and procedures that support meeting CAP goals and improving sustainability of campus operations, and leverages the input and knowledge of an important group of University staff. The buy-in, participation, and expertise of the various CAP-IT members are integral to producing future policy and procedural guidelines that are realistic, appropriate, and likely to succeed. For example,

the input of the utility manager or purchasing contracts officer are required to produce feasible energy conservation or green purchasing standards.

CAP-IT represents a form of *top-down support* for employees working towards sustainable operations, one of the main barriers identified in the purchasing survey. Concerns and barriers such as lack of clear policies, guidance, and upper-level support can be addressed directly by the policy development work of the CAP-IT. A common sentiment for Green Team members is a lack of authority and ability to direct their coworkers and departments in greening their operations in the absence of larger university-wide policy. The policies created by CAP-IT will have that authority, because those involved in drafting such policies are the campus employees with the expertise and decision-making capabilities required to draft a realistic and implementable policy.

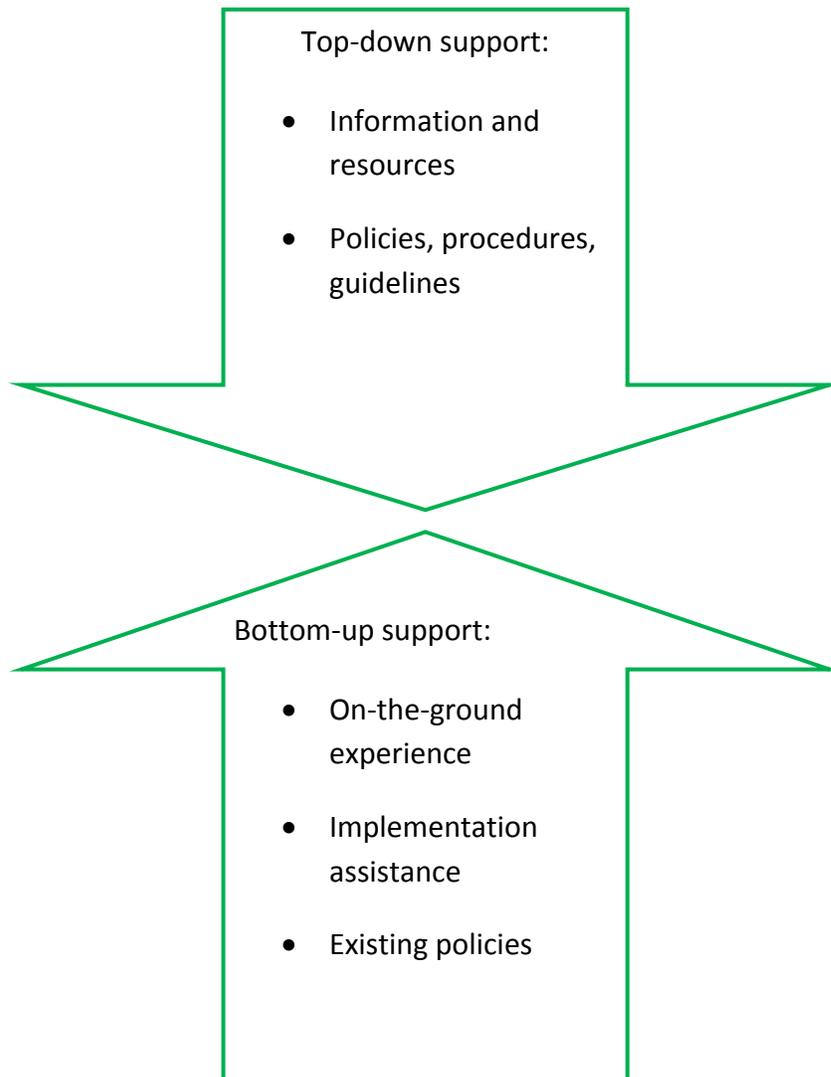
CAP-IT also represents a major, institutionalized means of breaking down the silos and separations between University departments through much-needed *collaboration*. Members from across all relevant administrative and educational departments are meeting monthly to discuss and act on sustainable operations, something that was not occurring previously. Members are assessing the feasibility and next steps required to implement policies and procedures to reduce PSU's carbon footprint. For example, the materials subcommittee is looking at centralized paper purchasing and delivery, so that PSU can more easily track usage, reduce deliveries, and maintain high recycled content.

Just as Green Team meetings are a forum for collaboration and increasing connections on a grassroots, bottom-up level, so too is CAP-IT bridging those gaps at a

higher, administrative level. The positive opportunities that CAP-IT presents are many, and the team could potentially address some of the issues outlined by employee feedback.

Green Teams and CAP-IT can be seen as two sides of a spectrum, both working towards similar goals, yet with different capabilities and means of achieving those goals. One is a grassroots, bottom-up effort composed of PSU employees that are engaged in “greening” our campus at the department level. The other is a top-down committee of organizational decision and policy-makers tasked with designing means of meeting carbon reduction and campus sustainability goals. One would probably not succeed in the absence of the other; top-down ideally should be met with bottom-up efforts to engender lasting success. If the organization's administration simply decrees that certain goals must be met, or announces an “all staff and faculty must ____” policy, it is unlikely to be implemented without the backing and support of engaged employees at all levels. Likewise, those at lower levels have been working for years in the absence of upper-level support, and have tended to feel isolated and unsupported, not the circumstances for maximum success. For example, CAP-IT subcommittees are planning to leverage the on-the-ground support and previous experience of Green Teams for successful drafting and implementation of policies and procedures. Green Teams have been waiting patiently for upper-level policies that support the best practices they have been promoting for years on a grassroots, department level. Together these teams have the potential to push PSU to the next level in sustainability.

Figure 6: CAP-IT, Green Teams



In addition, the EcoDistricts initiative presents a challenge for PSU to progress on sustainable operations and practices that support development of a resilient and resource-efficient University and district. The Green Teams and CAP-IT could also be utilized as aspects of governance structures that facilitate development of the South of Market (SOMA) EcoDistrict in which PSU is directly involved as a stakeholder and supporting organization. As stated in the Portland Sustainability Institute (POSI) *EcoDistricts Toolkit: Engagement to Governance*, identifying a governance structure (or structures) is critical for EcoDistrict success:

Engagement, through community outreach and partnerships, is critical to promoting long-term neighborhood stewardship and community action. To build sustained support for EcoDistricts, the engagement process allows a neighborhood to identify priority projects: its vision. And an EcoDistrict governance entity—with the resources and skills to guide the district, to help finance investments, and to monitor and report results over time—is critical to realizing the community’s vision. This entity may be a new organization, it may grow from an existing neighborhood or business association, or it may be an alliance of organizations (Portland Sustainability Institute 2010).

The SOMA EcoDistrict pilot that includes PSU will be creating a governance structure as part of their primary efforts. Green Teams and CAP-IT could and should be utilized as existing governance structures within PSU to facilitate progress on the initiative towards a more sustainable organization and thus potentially, a more sustainable district.

Much of the EcoDistrict language refers to the potential to “scale up,” or start small and expand efforts to larger scales. In other words, if EcoDistricts can be successful models of urban sustainability, why then can we not scale up to developing a sustainable city? Likewise, could a more sustainable PSU scale up to a successful EcoDistrict? One could question whether or not scaling up is always possible, however

nonetheless, scaling up is a central tenet of the EcoDistricts initiative. Working within that framework, if PSU can improve the sustainability of its operations, and the organization remains a high-profile anchor of the district, PSU's sustainability can thereby support the development of the proposed EcoDistrict through scaling up. Moreover, if PSU fails to operate more sustainably, this would certainly hinder development of an EcoDistrict that is billed as an "integrated and resilient district or neighborhood that is resource efficient" (POSI, 2009).

The EcoDistrict initiative runs the risk of being a property-owners association, more concerned with the business interests of those owners than with making a sustainable community. However, the stated goals of the EcoDistricts initiative are farther reaching—a district that reduces its impact on surround ecosystems through innovative approaches to resource use, waste, and social connections and engagement of residents. If Green Teams and CAP-IT could help facilitate sustainable operations within PSU, a sustainable PSU should strengthen the SOMA EcoDistrict by promoting the intended characteristics of an EcoDistrict and proving it more than simply a business-focused association.

One of the main challenges in moving forward with EcoDistrict development will be coordinating with and engaging the multiple stakeholder groups—groups that likely have never coordinated on any previous efforts. Maintaining the connections and information sharing between departments that Green Teams and CAP-IT facilitate are thus an important facet of a successful EcoDistrict that effectively incorporates and engages the needs, knowledge, and capabilities of *all* users of the district. One could

venture to guess that an EcoDistrict which encompasses PSU but does not incorporate and leverage these existing structures would be relatively unsuccessful and might repeat past mistakes of fragmentation, poor coordination, and lack of collaboration.

Despite their potential to address relevant organizational issues and provide support to future governance structures of the SOMA EcoDistrict, the Green Team and CAP-IT efforts have a weakness when it comes to bridging the divide between administration and academics. At present these teams do not fully incorporate or engage students and faculty as much as they could. While faculty are invited and welcome on Green Teams, there are very few faculty who participate; further inquiry into why this is, and how to better engage faculty is needed. Furthermore, although the CAP-IT does technically have a Research & Education subcommittee, representation from academics on the overall CAP-IT is currently weak to nonexistent, and the effort to connect research to the needs of sustainable campus operations is still nascent at PSU. It seemed that some of those involved in CAP-IT were aware of the need to connect research, faculty, and students to the effort to green the campus, yet a means for achieving that connection is still in developmental stages.

Future research is needed to better understand how to engage students and faculty in the work towards a sustainably-operating campus. We need to understand how to better connect the research and teaching side of sustainability with PSU's physical campus operations as a local "living lab." Why did the SWOT word clouds reflect different dimensions for the problems and solutions around sustainability on campus, and how can we better connect the strengths and opportunities (students, faculty, academics)

to the weaknesses and threats (administration, operations)? Additionally, there is a need to better understand how students and faculty alter or shape the University's path towards operating more sustainably. Can student's needs and demands encourage policy development on the administrative side of the University, and how might those needs be better communicated from the students to administration? How does faculty involvement or non-involvement affect meeting of University sustainability goals, or how might PSU's ability to attract quality faculty be affected by the University's sustainability? Obviously if sustainability is about making connections and addressing the issues holistically—as this research has argued—the fact that certain segments of PSU's population are still under-represented in efforts to promote sustainability presents a serious problem that needs more attention. These questions, while out of the scope of this research, merit attention if we are to make further progress on maximizing sustainability at PSU.

Recommendations

In order to develop an organization that can progress, learn, and improve its functioning, a richer understanding of the organization's internal issues is essential. This analysis of existing survey data and internal opportunities was intended to do just that. The findings imply that the following recommendations would be important steps for enhancing sustainability at PSU:

- *Increase collaboration between departments around shared sustainability goals*

Collaboration between departments, and generally between operations and academics, will be a necessary step in most all sustainability initiatives or policies, and was a main grounded theme in the SWOT survey results. True operational sustainability cannot exist in one discrete department, separate from other department's functions, because it is instead a manner of functioning that must touch all operational functions. For example, the Campus Sustainability Office (CSO) has tried in the past to create overarching resource conservation policies, yet was unsuccessful due to a lack of buy-in or implementation support (forms of important information-sharing) from the required collaborators such as the Office of Information Technology, Facilities and Planning, or Business Affairs Office, not to mention with support and guidance from faculty and students. Representatives from all of the campus must be present at the table, sharing information, experience, and expertise in order to craft policies and a manner of operating sustainably that is realistic and implementable, not to mention, supported by those who would be affected by the changes the policy creates.

- *Increase top-down support and leadership for sustainability in the form of*

guidelines, policies, and distribution of information between levels of the hierarchy

The employees surveyed about green purchasing indicated that they were seeking information and leadership from the University. The literature suggests the importance of information flows between low and high levels of a hierarchy. In PSU's case, guidance, resources, and suggested best practices around sustainable operations are important because a hierarchical structure inherently requires new decisions or practices to follow a chain of command, and for employees at lower levels to seek approval for such changes from those in authority. At PSU, current purchasing practices are a veritable free-for-all without many guidelines; if the University is interested in their employees engaging in more sustainable purchasing practices, it should distribute the information on how and why this should be done throughout the organization to make that possible. Without these changes, business as usual will continue.

Observational data from Green Teams suggested that lower and mid-level employees (those most involved in Green Teams) can feel uncomfortable acting as a departmental authority on sustainable operations in the absence of University-wide policies or directives from those at higher levels. In a sense, some Green Team members seemed to feel like they were simply being bossy and telling their coworkers what to do, as the guidance wasn't coming from a place of authority. In this way, matching the Green Team engagement in sustainable office practices with high-level support through policy or guidelines for sustainable practices would give Green Teams credence and pave the way for further improvements the operations of PSU at the department scale.

- *Increase engagement and empowerment of employees, faculty, and students*

This recommendation is related to the former. Within a framework of official University sustainability policy and vociferous, institutionalized support for sustainable operations, employees and faculty working at all levels, as well as students on campus should be reminded that they too play an important role in helping PSU meet its Climate Action goals and support development of an EcoDistrict. In other words, members of the PSU community should feel empowered—that they have a meaningful role to play in the sustainability of PSU's operations—and this empowerment could increase the engagement of individuals in practices that support a sustainable organization. The success of any sustainable operations policy or guidelines will require the participation and engagement of large numbers of PSU members at all levels. Without seeing that these practices are encouraged by all levels of the organization, many people may be reluctant to become involved, especially those who do not feel they have authority to affect others' behavior, or affect change as one lone individual. Thus, giving individuals a stable, supportive framework within which to work, involvement would likely increase and become more effective.

Conclusion

Portland State University, like most organizations, is divided into separate parts—departments that each address specific, largely-discrete functions to support the continuation of the organization's purpose. In this way, we see remnants of Cartesian Enlightenment science, and the orientation that separates things in order to understand them, and puts each in its functional place. The separation between mind and matter, nature and culture, or the separate functions of an organization or society are all examples of this orientation. It is clear that our perceived separation from the natural environment has had devastating impacts on the way we use and treat that environment and the resources it provides. Interestingly enough, the same orientation of separateness, disparate functional parts, and hierarchy can be a barrier to more a sustainable existence both within global society as a whole, and within organizations such as PSU.

Forging connections between functional parts and enhancing collaboration around common sustainability goals are integral next steps if we are to move towards a more sustainable future for cities and the large organizations that shape them. PSU has not progressed in a way that fully utilizes its strengths—the knowledge, passion, and education around sustainability for which it is known—or applied those strengths to its shortcomings in sustainable operations. This research shows that surveyed employees at PSU encounter organizational issues such as silos, lack of commonly-shared goals, lack of information-sharing, and the need for top-down direction with regard to sustainability. These issues are related to the organization's structure and functioning, and may inhibit engagement in sustainable practices and development of policy that supports the

sustainability of PSU. Fortunately, there are also structures in place such as the Green Team program and CAP-IT that present opportunities to address some of these issues. If sustainability has indeed stalled for reasons identified by survey respondents, these structures can help promote sustainability on campus, along with the following recommendations:

- *Increasing collaboration between departments around shared sustainability goals*
- *Increasing top-down support and leadership for sustainability in the form of guidelines, policies, and distribution of information between levels of the hierarchy*
- *Increasing engagement and empowerment of employees, faculty, and students*

The old adage “the first step is admitting you have a problem” is appropriate here.

Usually used in reference to overcoming an addiction, this phrase applies to unsustainability, which can be seen as an addiction to overuse and waste of natural resources. The purpose of this research was to illuminate organizational issues at PSU that may serve to inhibit forward progress on sustainable operations in the face of the University's stated interest in sustainability (to admit we have a problem), and then to propose appropriate opportunities for progress. While PSU currently fails to operate as sustainably as possible, we are fortunate to also have within our walls a lot of unharnessed, (albeit uncoordinated) capacity, and two structures that are addressing some of the issues we face. Continued support of, and engagement in, Green Teams or CAP-IT, especially with increased student and faculty presence, will help to forge connections, and embed shared sustainability goals within each facet of the University through

collaborative work on those goals. PSU has the potential to be a leader not only in sustainability teaching and research, but also in the sustainable operations that will allow the University to meet its Climate Action Plan goals, and live up to the requirements of a successful SOMA EcoDistrict. Continual progress towards a sustainable future for PSU is also progress towards a sustainable city, region, and world—let's get to work.

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Appendix A: SWOT Survey

PSU Sustainability Strategic Planning Process

Please help us perform a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of the overarching sustainability effort on campus. When responding, please think about the larger sustainability working group and program, not just your office. Thank you for your feedback!

* Required

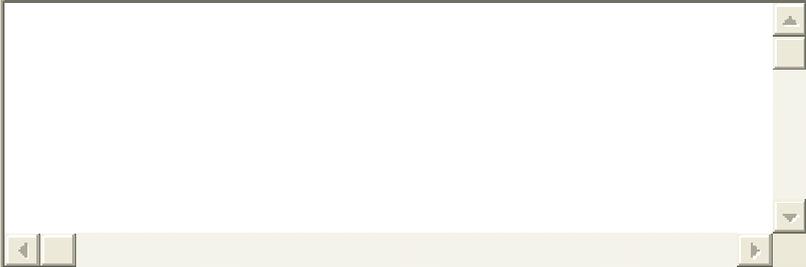
Strengths *



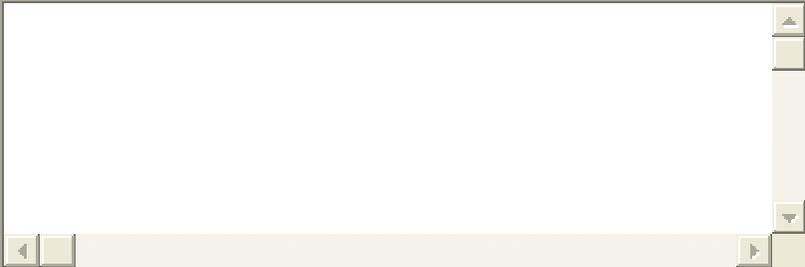
Weaknesses *



Opportunities *



Threats *



PSU Affiliation *

Student

Appendix B: Green Purchasing Survey

PSU is developing a green purchasing program and we would like your feedback.

Green purchasing = considering environmental, economic, and social factors in our purchasing decisions; such as energy efficient appliances, recycled content garbage bags, and supporting emerging small businesses.

We are interested in learning what resources and tools would be useful to you when you are purchasing for PSU.

GO GREEN! BUY GREEN!

**We would appreciate knowing a little about your role at PSU.
Please be assured that your responses to this survey will remain anonymous.**

How long have you worked at PSU?

- 0-2 years
- 3-5 years
- 6-10 years
- 11-20 years
- 21+ years

What is your role at PSU? Please specify your position.

- Staff
- Faculty
- Administrator

Which area of the University do you work in?

- FADM

- Academic Affairs
- Community Relations
- General Counsel
- President's Office
- Other (please specify)

Do you have a PSU procurement card?

- Yes
- No

Do you do the majority of the purchasing for your office/department?

- Yes
- No

Green Purchasing Section

Please rank the following product areas that you think PSU should address in the coming academic year. Why?

(1 = most important to 14 = least important).

- PSU logo clothing
- Food and food packaging
- Appliances (refrigerators, dishwashers etc...)
- Furniture

- Office Supplies
- Paint and Carpeting
- Paper
- Promotional items
- Travel
- Shredding services
- Printers and copiers
- Water (water coolers, water filters)
- Computers
- Other

Which of the following do you see as potential barriers to green purchasing at PSU?
Mark all that apply.

- Availability of Green Products
- Quality or Performance Perceptions
- Cost
- High Level University Support
- Personal Lack of Knowledge
- Time to Search for Green Products
- Lack of Banner support
- Lack of Clear Policies and Guidance
- Colleagues with Negative Perceptions About "Green"
- Other barriers or any solutions that could help us address these barriers.

Please tell us here.

Click to write the question text

- Click to write Choice 1
- Click to write Choice 2
- Click to write Choice 3

Please rank the following resources that PSU could provide that would help you to make greener purchasing decisions?

Drag and drop the options to place them in order of importance

(1 = most important to 10 = least important).

- 1 Checklists that help you identify sustainability attributes when shopping for products
- 2 Faculty and/or student research (e.g. to help assess costs/benefits or research greener alternatives)
- 3 Web resources such as product guidance, contracts, things to avoid and vendor information
- 4 Purchasing policies that establish formal standards for products
- 5 List of product alternatives that meet sustainability criteria
- 6 List of contracts containing green products and services
- 7 Purchasing standards and guidelines that are clear and easy to follow
- 8 Trainings (basic info)
- 9 Training (specific/detailed info)
- 10 Other (please specify)

I would feel comfortable spending more PSU money for a quality product if...

I would feel comfortable spending more PSU money for a quality product if...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
it was made from recycled content	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
it used less energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
it used less water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
it was less toxic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
it could be easily recycled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
the vendor would take it back at the end of it's life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
it came in less packaging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
it saved money long	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I would feel comfortable spending more PSU money for a quality product if...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
term it was made using ethical labor practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Are you familiar with the following third-party certifications (eco-labels), standards and tools for purchasing green products and services?

Are you familiar with the following third-party certifications (eco-labels), standards and tools for purchasing green products and services?

	I know it well	I have heard of it	I do not know it
Green Seal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EcoLogo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy Star	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GreenGuard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EPEAT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green-E	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forest Stewardship Council (FSC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Responsible Purchasing Network	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Life Cycle Costing" or "Total Cost of Ownership"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What do you think will motivate more PSU staff involved in green purchasing and other sustainable practices?

- Incentives (such as promotional items)
- Recognition (campus awards, announcements, certificates)
- End of year party
- Other (please specify)

Would you sign up for a monthly or quarterly purchasing bulletin that included green purchasing news?

- Yes (please provide your email address and indicate monthly or quarterly)
- No
- Maybe

Please share questions or comments that were not addressed in this survey

Thank you very much for completing this survey. Your feedback is valuable to us.

Any other comments or suggestions can be sent to us at: buygreen@pdx.edu

- Yes, I would like to receive a summary of the results (please include your email address)