BUILDING A MODEL OF WATER SUSTAINABILITY BY INTEGRATING OPERATIONS, RESEARCH, AND CURRICULUM

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Introduction

Pacific Lutheran University's (PLU) mission statement: "to empower students for lives of thoughtful inquiry, leadership, service, and care—for others, for the community, and for the Earth." puts us in a unique position to meet the challenge of leading the U. S. into a sustainable future. To help us fulfill our mission of caring for the Earth, PLU has recently received a grant from the Russell Family Foundation to link education and campus operations through sustainable water use. U. S. universities have been criticized in their role as educators of U. S. leaders for not moving boldly forward to teach care of our environment, explicitly in curriculum and implicitly by constructing ecologically sound academic buildings and living spaces, nor do they use their substantial purchasing power to support environmental sustainability (Cortese and McDonough 2001, Orr 1994, 2002). We seek to educate future leaders about the environment by developing a sustainable water use model for PLU.

Water is an essential resource—for human life and for ecosystem health. Poor water quality coupled with scarce supplies can cause serious human health problems, especially in poor communities, and result in extreme damage to ecosystems (United Nations 2003). Despite chronic water scarcity in some parts of the world (FAO 2003), the water crisis actually results from the way we govern water and as well as from our attitudes and behaviors (United Nations 2003). High U. S. per capita domestic water use (185 gallons/day U. S. average with some states over 300 gallons/day in 1990 (Florida EPA 1996)), indicates we need to change the way we view and use water.

Although the Pacific Northwest (PNW) is famed for its abundance of water from seemingly endless winter rains, water is an increasingly scare resource in the PNW. In urbanized areas, water flow off of buildings and highways into rivers and streams causes water quality and quantity problems—too much when it's raining, too little when it's not. Much of the PNW relies on snow-melt to provide water during dry summers; warmer winters and summers may dry up this source (Stricherz and Hines 2003). In addition, large amounts of untreated waste are dumped into waterways—Puget Sound receives 30 million gallons of untreated human waste each day from the city of Victoria alone (Krueger 2003). Despite public concern for the environment and a seeming abundance of water in the PNW, many animal populations that rely on water are now depleted, threatened, or endangered, including orcas (Stensland 2003) and runs of salmon (U.S. Fish and Wildlife, 2000). Because of the aforementioned global and local water issues, we chose to focus on water sustainability at PLU.

Many U. S. universities implicitly teach excess water use through their water management strategies. For example, landscape watering keeps campus lawns green through the driest summers, students have unlimited 'free' access to water, and plumbing fixtures are often old and use excessive

amounts of water. Given this implicit education, students come to expect unlimited access to water and often they do not question the effect of their expectations on ecosystems and human health.

PLU is addressing issues of environmental leadership and water use by developing and implementing a sustainable water resource use plan, which integrates operations, research, and curriculum. This program builds on existing strengths in the Environmental Studies Program (Whitman 2001) and Environmental Services Division of Facilities Management (McConathy 2001). Students in the Environmental Studies program study the local watershed during a required integrated field-based methods course (Whitman 2001); some courses within the major also have units on water. The Environmental Services Division not only manages surplus materials and recycling, but also seeks to educate the campus and local community about environmental issues (McConathy 2001). In the 2000-2001 academic year, PLU recycled 262 tons of material and the SurPLUs store, which collects and sells unwanted items from students and departments, generated $6500 (McConathy 2001).

Conceptualizing Water Sustainability

In our effort to make PLU a model of water sustainability, we first needed to conceptualize water sustainability. We began this process by examining our use of water through student projects, then we began designing a sustainable water use plan for PLU. Our plan includes changes to the living and teaching environment at PLU, as well as changes to curriculum and continued student research projects. Our collaborative group includes students, operations staff, administrators, and faculty members. An important key to the success of our collaboration is the participation of PLU's administration. Our collaboration allows the entire university community to have a voice in planning and to contribute their expertise, which enables us to create comprehensive plans rapidly. For example, student research informed the plan for retrofitting of a 100-student residence hall with efficient plumbing fixtures. To further facilitate a collaborative planning, the campus Sustainability Committee held a water sustainability workshop for students, operations staff, administrators, and faculty members in June 2003.

We built our concept with help from two consultants—David Orr and Anthony Cortese—and exemplary examples from other universities. Both Orr and Cortese cautioned that water sustainability encompasses far more than water conservation; conservation is a series of behaviors that minimize water use, whereas sustainable water use means that a community can use water at the same rate and the natural water cycle can support that use for a very long period of time. David Orr visited PLU as a part of our Earth Week celebration, which focused on water. During his visit, Orr gave a presentation and met with students, staff, faculty, and administrators to share his vision of a campus environment that teaches living sustainably in our environment by using architecture as implicit learning tool. Orr challenged students to make large changes, rather than trying to fix small parts of environmental problems. Anthony Cortese participated in our water sustainability workshop as a keynote speaker and as a consultant. Cortese encouraged us to make "the invisible visible" to show the campus community where resources are wasted because purchase prices do not reflect the environmental costs of using resources. Cortese also suggested that we consider including products, such as paper, and social justice ideals in our plan for water sustainability. We also looked to another Pacific Northwest college—Lewis and Clark College—for a model of sustainable changes led by students. Julian Dautremont-Smith, a student at Lewis and Clark, led the campus in a plan to comply with the Kyoto Protocol for carbon dioxide emissions; $17,000 of the funding for this project came from a voluntary student fee increase.

Student Research

Student research on campus water use and conservation efforts in environmental studies courses, independent studies, internships, and capstone projects is enhancing knowledge about campus water use and sustainability strategies. Research projects are supervised by faculty and operations staff. These research projects serve to strengthen the water use emphasis of the environmental studies program and to inform operations of possible problems with, and solutions to, water use issues. Initial research on campus water use was conducted during an introductory Environmental Studies course (Conservation of Natural Resources). As a final project students were required to study resource use on campus and many chose to investigate water use. These projects often involved surveys of other students' water use. Many students were surprised by how much water they use in a day and chose to inform other students in the residence halls by posting informational signs.

As a result of these class projects, we decided that campus water use and billing information should be available for students, staff, and faculty to facilitate learning and water management decisions. An independent study student compiled and analyzed monthly water billing information during 1998-2002 for the 55 water meters on campus. We are using this information to study and manage water use and determine the effectiveness of water sustainability projects on campus.

One Environmental Studies senior capstone has been completed on water sustainability at PLU. This student built his project on residence hall water use on the previous class projects and the independent study project. He determined water use by auditing fixtures in residence halls and surveying students attitudes toward water use. His study determined that residence halls on the PLU campus have a range of fixtures and water use systems. For example, showerheads have flow ratings that range from 2.0 to 10.0 gallons per minute (Friesth 2003). These findings indicate that PLU needs a replacement plan that will replace worn, broken, and high-flow fixtures with low-flow fixtures and track replacement location and date. Because low-flow fixtures may have higher purchase costs the plan should include comparisons of initial, operating, and repair costs of different types of fixtures and identified sources of durable low-flow plumbing fixtures. This plan will result in upgrading water conservation throughout campus by replacing older, less efficient fixtures with newer, efficient fixtures. Because the student worked closely with the campus plumber and was advised by the Director of Facilities Management, campus operations has timely access to information which they need to plan for water sustainability.

This student also surveyed students on their water use and attitudes toward water use. In general, students under-estimated their daily use of water (Friesth 2003). These students also indicated that they cared about the environment, but they felt they lacked information about impact of everyday actions and did not know how to conserve. A minority of students felt that they have already paid for utilities so they have no reason to conserve. To encourage awareness of water use, PLU held a water conservation competition during the annual campus Earth Week celebration. Individual residence halls managed to decrease water use by as much as 15%, but anecdotal information indicates students may have moved water use to other buildings on campus, rather than actually conserving water. These results indicate that in addition to changing the management of water on campus, we need to educate students about responsible water use, both formally in courses and informally through conversations, informational signs, and campus life activities. Through these combined activities, we will align students' formal education on environmental responsibility with their lived experience on campus, thereby building both environmentally responsible ethics of resource use and personal strategies for ethical daily living.

Our current Russell Family Foundation Water Sustainability fellow is focusing on alternatives to traditional storm water management, specifically Low Impact Development (LID) strategies for campus. LID strategies manage storm water at the site of development, rather than moving water off into detention ponds. One common LID strategy is to build bioswales—areas filled with permeable soils over gravel that are lower than nearby roads or parking lots. During rainstorms water runs off the road into the bioswale where it soaks into the ground. The fellow's study will culminate in a list of proposed campus water sustainability projects and an attempt to procure funding for at least one major project. Hopefully fundraising will involve a small tuition check-off fee, approved by the PLU student body, that would fund a specific sustainability project, similar to funding of Dautremont-Smith's project at Lewis and Clark College. Such a check-off would help to educate students about our campus sustainability movement, as well as providing the funds to actually create tangible change if the fee is approved by the student body. This fellowship project will likely become a senior capstone project and campus sustainability leaders in Operations, Administration, and the Faculty are advising the Fellow.

Renovation Project

Capstone research on plumbing fixtures and student attitudes was used by Facilities Management to design the retrofitting of a three-story, 100-student residence hall for water sustainability as a renovation pilot project. This retrofitting project takes advantage of the need to replace building plumbing because pipe joints were leaking. Operations staff, residential life staff, representatives of the office of student involvement and leadership, faculty, and students involved in the research projects met with students living in the residence hall to discuss ideas for renovation and determine student attitudes toward low flow fixtures. Students in the residence hall were interested in renovation plans and were excited to be a part of the planning process.

The resulting residence hall retrofit will standardize all sink faucets, urinals, and showerheads with low-flow fixtures (table 1). Showers will also be equipped with valves on the showerhead to allow students to minimize water use by turning the water off briefly while showering. Toilets in this residence hall were standardized in the mid-1990s. In addition because of PLU's plan to become a model of sustainable water use, a section of walkway, which needed to be repaired, by this building is being replaced with permeable concrete. This permeable walkway will allow rainwater to soak into the ground, rather than running off during rainstorms.

Table 1: Current and replacement plumbing fixture water use.

Fixture	**Current fixture water use**	**Replacement fixture water use**	**Change in water use**
Sink aerators	2.0-4.0 gallons/minute (gpm)	0.5 gpm	1.5-3.5 gpm
Shower heads	2.0-10.0 gpm	2.0 gpm	0.0-8.0 gpm
Urinals	2.0 gallons/flush (gpf)	1.6 gpf	0.4 gpf

Workshop

Approximately 25 people—10 staff/administrators, 10 faculty, and 5 students—attended our four and a half day water sustainability workshop. The foundation for the workshop was drawn from the PLU mission statement, specifically the "thoughtful inquiry, leadership, service, and care—for . . .

the Earth" part of the statement. We intended to build on our mission statement by specifically addressing issues of water sustainability in the curriculum, research, and operations at PLU. The goals of the workshop were:

> "To link PLU's mission statement, curriculum, and campus operations around the theme of water sustainability. We will embody the values of environmental awareness and responsibility in the mission statement through water themes in the curriculum of environmental studies courses and in the strategic planning for water sustainability projects on campus. We will create a water sustainability plan, or "road map," of campus projects that can be presented to the campus community."

Structure

The workshop was structured with daily writing periods, talks, field trips, and small group discussions/planning (appendix). Writing periods gave participants time to reflect on their personal interactions with water—through questions on water use, water bodies, favorite places, and stories about water. Presentations included keynote addresses by Anthony Cortese of 2nd Nature and Denis Hayes of the Bullit Foundation as well as presentations by local experts on low impact development and habitat restoration. These presentations provided both local expertise and the global and national framework surrounding the need for sustainable resource use and sustainable development. Field trips provided hands-on experience of campus water use in areas taken for granted on campus—boiler rooms, kitchens, and grounds—and led workshop participants to think about how water is managed on campus, as well as focusing on local water sources and pollution problems. Small group discussions gave participants a chance to brainstorm about local water issues and solutions in small mixed groups of faculty, staff, and students. At the end of each day the groups presented summaries of their discussions and each participant was given a set of 5 dots to vote for their favorite ideas.

Outcomes

During the workshop we discussed campus goals for water sustainability, long-term campus projects that will require years to design and complete, and changes that can be implemented as a result of having a clearly defined goal. The workshop resulted in increased sense of community, energy, and interest in continued participation in projects that benefit campus living and academics. The voting system clearly identified which ideas had the broadest support and allowed us to easily prioritize future campus ideas or projects.

Water Sustainability Goal. We continue to refine our model of water sustainability; our working definition of water sustainability is presented here. "Recognizing its location in the environmentally conscious region of the Pacific Northwest and our university mission, Pacific Lutheran University is committed to becoming a model in the wise and fair use of water, one of our most precious natural resources. Through its innovative project in water sustainability, PLU is working so that water use on campus—both visible water use and invisible use—has minimal negative impact on human or ecological health on or off campus. Our goal is to use water wisely and fairly, thereby preserving our local watershed and water quality while promoting social justice and teaching students about the importance of clean, abundant water for human and ecological health."

Long-Term Projects. We proposed many large projects which we felt would educate students implicitly about water sustainability, serve as focal points in curriculum, and take advantage of campus resources and current building plans. Currently, we plan to take advantage of the residence hall renovation schedule to create greener student living space. We envision that retrofitting the residence hall this summer will be a first step toward gradual green renovation of all residence halls. Subsequent renovations will incorporate additional green technologies. For example, the Morken Teaching and Learning Center, which will be heated and cooled by a geothermal well-field, will be Leadership in

Energy and Environmental Design (LEED) certified. Retrofitting will allow similar heating and cooling systems to be installed in residence halls, which will allow us to remove many of the large boilers on campus that use a large amount of water. After installation, the well-fields will use mostly on-site resources for heating and cooling, thereby narrowing our ecological footprint. Ultimately, we plan to have a LEED certified residence hall renovation. This hall would incorporate low-flow plumbing fixtures, geothermal heating and cooling, a roof top water collection system or a roof top garden, permeable walkways, and native plant permaculture landscaping. Low-flow fixtures minimize water use; geothermal wells and rainwater collection systems use on-site resources for heating and irrigation. The permeable walkways, and permaculture manage storm water runoff on-site in a manner similar to water flow in a natural environment. Roof top gardens decrease storm water runoff and minimize temperature changes in buildings. Together these technologies minimize water use and disruptions to the water cycle that commonly occur in human environments. We also hope to use these technologies and strategies for other long-term projects throughout campus including: using low impact development techniques to manage storm water on streets that go through campus, and replacing some grass fields with native vegetation that does not require constant summer irrigation.

Just Do It! Given an overarching goal and long-term projects, many of our proposed ideas can be implemented in the course of regular maintenance, student activities, or by rethinking current course materials. For example, large puddles cover some walkways and parking lots on campus during rainstorms. By replacing asphalt walkways with permeable asphalt or concrete when they need maintenance, storm water management will gradually shift and puddles will be minimized, thereby solving a foot traffic problem while moving the campus toward sustainable water management. Similarly, parking lots can be redesigned with bioswale drainage areas (Low Impact Development Center 2000) and bioswales can be installed as a part of parking lot maintenance. We also plan to research products commonly used on campus, find equivalent products that minimize water use and water pollution and persuade the campus to change its purchasing strategy.

Informing students about water use on campus and water sustainability can be accomplished by incorporating campus water use, attitudes, and values into courses. For example, on campus field trips similar to the field trips held during our workshop can be added to environmental studies science courses. These field trips will show students the hidden water use in areas often taken for granted on college campuses—kitchens, boiler rooms, grounds—and will be led by operations staff. In philosophy and religion courses students can explore how their attitudes and expectations influence their daily behaviors. These discussions linking behavior and expectations, with values and environmental ethics will make individual responsibility for resource use and abuse visible. In addition to curriculum changes, we plan to educate students about water sustainability by adding information on water use to orientation programs, residence hall activities, and use of informational signs.

Building Campus Community. The workshop integrated groups that traditionally do not interact closely with each other on a regular basis. Each group shared their expertise in presentations and field trips. During mixed small group discussions we focused on campus needs and projects to meet those needs—with creative results. These discussions brought forth creative solutions that require the skills of, and participation from, all and will lead to benefits to the campus community as a whole. In addition, we learned that student, faculty and staff attitudes all reflect caring for our local environment—natural and built, but that individual groups often lack information about water use that is available from other groups on campus. Communication among groups on campus enhances our ability to educate students about water sustainability and focus the campus community on our overarching water sustainability plan.

Assessment

Generally, all workshop participants found the workshop was informative, interesting and promoted creative problem solving (table 2). We assessed the workshop by handing out evaluation forms on the final day of the workshop. The evaluation form asked participants to rate the workshop overall and to rate individual parts of the workshop from 1 (not successful) to 5 (very successful). The most successful parts of the workshop were field trips and small group discussions. Although we felt we made progress toward our goal, we acknowledge that much work remains to be done. Especially we feel that we need to keep our group moving forward and we need buy-in from the whole campus community.

Table 2: Summary evaluation of the water sustainability workshop.

Overall evaluation	Rating	Component evaluation	Rating
Workshop met stated goal	4.5	Water journal	3.6
Workshop structure promoted interest	4.8	External presentations	4.6
Workshop provided needed information	4.5	PLU presentations	4.6
Workshop resulted in creative solutions	4.7	Field Trips	5.0
		Small group discussion	4.9

Curriculum Changes

In addition to previously mentioned curriculum changes, there are other opportunities to educate students about water sustainability. PLU is in the process of revising its core curriculum. This revision process provides us with an opportunity to educate all students about the environment by requiring environmental coursework as part of the core. If this change is successful, we could educate all students about responsible use of resources. The core curriculum will be discussed during faculty meetings associated with the annual fall university conference.

Within the Environmental Studies major, we are also considering curriculum changes. These changes range from the courses included in the major to changes within individual courses. In late July Environmental Studies faculty will meet to discuss the major, especially incorporation of global issues in the major. As a result of the water sustainability workshop, nine faculty from religion, philosophy, English, biology, chemistry, and geosciences have committed to incorporating water sustainability units into existing courses. These curricular changes will result in water sustainability and global issues becoming central themes of the Environmental Studies program. Incorporation of water sustainability in the curriculum, coupled with sustainable water management supported by campus operations will expose students to theoretical and practical aspects of sustainable water use.

Conclusions

During the last year, we have planned and started to build a sustainable water use model for PLU through student research, meetings, and our workshop. This model includes people from the entire campus community and results in changes in operations, purchasing, curriculum, and student living. By bringing together students, staff, and faculty to research current water use and to discuss options for the future, PLU is in the process of becoming a model formal and informal educational institution with its mission, curriculum, research, *and* living all focused on same goals—sustainable water use.

Acknowledgements

The work reported on in this paper was funded by a generous grant from the Russell Family Foundation. This paper reports on the work of many people at PLU. We would especially like to thank the students who completed research projects on water resources at PLU, the workshop participants, and the members of the Sustainability Committee.

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Appendix: PLU Water Sustainability Workshop Schedule

Sponsored by The Russell Family Foundation

June 2 – 6, 2003

Faculty House Dining Room

PLU Mission Statement: "PLU empowers students for lives of thoughtful inquiry, leadership, service, and care—for others, for the community, and for the Earth."

Workshop Goals: To link PLU's mission statement, curriculum, and campus operations around the theme of water sustainability. We will embody the values of environmental awareness and responsibility in the mission statement through water themes in the curriculum of environmental studies courses and in the strategic planning for water sustainability projects on campus. We will create a water sustainability plan, or "road map," of campus projects that can be presented to the campus community.

MONDAY June 2—Topic: Sustainability at PLU—Possibilities, Projects, and Goals

9:00 - 9:30 a.m. **Introductions and Goals: The PLU Mission Statement**
Writing a Water Autobiography: A Personal Relationship to Water and a Water Identity. Questions: In which watershed or system of rivers and streams were you born? Do you live? How does it shape your life?

9:30 – 10:30 a.m. **The Use and Abuse of Water Where We Work: Campus Sustainability Tour**, Amanda Miller and Dave Kohler

10:45 – 12:00 a.m. **How We Use Water**
"How Students Use Water," Eric Friesth
"Accomplishments and Needs for Sustainability at PLU," Dave Kohler, Amanda Miller, Barb McConathy
General Discussion: What is Water Sustainability?

12:00 – 1:30 p.m. Lunch in Faculty House

1:30 – 2:45 p.m. **Campus Presentation, University Center, CK East**
Anthony Cortese, founder of Second Nature and Educating for Sustainability—West Coast Network
"What Is Sustainability in Higher Education? U.S. Context Projects, Practices, and Theories"
Open Discussion and Discussion

3:00 – 4:00 p.m. **Break Out Groups—Faculty House**
Goal: To understand/define the current water use at PLU and look for ways to improve water use and raise water awareness through curriculum and campus projects.
Main Group Question:
What is water sustainability at PLU and how might we begin to incorporate water sustainability in campus curriculum and operations?
Questions to stimulate thought and conversation in the group:
How much water do you use on the job? How? How do you use water as part of your job? Do you make decisions on water use based on the need to conserve water? Why or why not? How might student water use in residence halls differ

from water use in a single-family home? Where in your work can water consciousness begin to find a place?

TUESDAY, June 3—Topic: Sustainability at PLU and the Pacific Northwest

9:00 - 10:30 a.m. **Campus Speaker, University Center, Regency Room**
Denis Hayes, President of Bullitt Foundation
"Washington Sustainability, Washington Water": PLU Sustainability in the Context of Regional Initiatives

10:45 – 11: 00 a.m. **Water Autobiography and Personal Writing**
How much water do you use in a day, and how? Write your water budget for a day, including at PLU.

11:00 – Noon **Water in the Classroom**: Several Faculty Share Water Education in their Classes

Noon – 1:00 p.m. Lunch in Faculty House

1:00 – 1:45 p.m. **Curtis Hinman, WSU Extension**
"How to Sustain Water at PLU"

2:00 – 3:00 p.m. **PLU Walkabout—A Water Tour with Curtis Hinman**

3:00 – 4:00 p.m. **Break-Out Group Question**: What are landscape possibilities for PLU water sustainability?
Questions to Stimulate Thought and Conversation: Where does the water you drink come from? Where does your sewage go? What are some of the main uses of water at PLU? How much water is used to water the lawns and gardens at PLU? Where does the rainwater on roofs and roads at PLU go? How many machines at PLU sell bottled water?

WEDNESDAY, June 4—Topic: To understand the impact of humans on western watersheds, with particular reference to PLU.

9:00 – 9:15 a.m. **Water Autobiography and Personal Writing:**
If you were a body of water, which one would it be? Why? If you were a water animal, which would it be? In other words, describe yourself as a body of water. As a water animal.

9:15 - 10:00 a.m. **"Clover Creek and the Water That Was PLU"**
Fred Tobiason and Kerstin Ringdahl

10:00 – Noon **Field Trip: Clover Creek & Parkland Light and Water Wells**

Noon – 1:30 p.m. Lunch at the Faculty House

1:30 – 2:45 p.m. "**Western Watersheds and Water Restoration Projects"**
Russ Ladley, Fisheries Biologist, Puyallup Tribe

3:00 – 4:00 **Break-Out Group Question:**
What might we do to restore the Clover Creek Watershed: class projects, operations implications?
Questions to Stimulate Thought and Conversation: What effect does PLU have on its watershed? How have local economic needs/population size affected

streams in the area? What everyday activities affect the local stream? What activities are affected by humans in the local watershed/stream? What are some reasonable alternatives to our current interaction with the local watershed (property values and economic development should be included).

THURSDAY, June 5—Topic: A new wave of campus activism: How might campus activism help change the campus environment? What is the confluence of curriculum, operations, and responsibility for water?

9:00 – 9:30 a.m. **Water Autobiography and Personal Writing:**
Describe a childhood memory involving a specific body of water—vacation, home, etc. Or describe a dream you have had which involves water?

9:30 – 10:30 a.m. **"Changing a Campus: Students and Faculty work together on Sustainablity at a Northwest College"**
Evan Williams, Professor of Chemistry, Chair of Environmental Studies and a student from Lewis and Clark College

10:45 – Noon **Break-out Group Questions:**
What initiatives might students to become more active in effective sustainability change on campus? How might faculty change curriculum? What about staff? What would be our top priority projects for campus generated water sustainability?
Questions to Stimulate Thought and Conversation:
How can we define sustainability or projects so they are clear and easy to articulate? What is needed to make activists of students? Faculty? Staff? How can we begin to affect the way others on campus think about the physical environment of PLU? How can we begin to think of PLU as a "place"—one that shapes us and one that is worth conserving?

Noon – 1:00 p.m. Lunch in Faculty House

1:00 – 4:00 p.m. **Field Trip: Simpson Kraft Paper Mill, Tacoma Tideflats**
Goal: See how industry uses water in the tideflats, its effect on Puget Sound, and restorations projects in industrial zones.

FRIDAY, June 6—Topic: How does local water policy affect water use at PLU? What is a "water sustainability road map" for PLU

9:00 – 9:15 a.m. **Water Autobiography and Personal Writing:**
Describe a walk by water—what do you see? What do you feel?

9:15 - 10:00 a.m. **"Water Policy and Water Conservation"**
Nadine Romero, Groundwater Science Services

10:15 – 11:00 **Break Out Groups**
Prioritizing a list of water projects for the future

11:00 – Noon **Group Discussion: A water map for PLU**
Thanks, Farewell and Evaluations