# Lane Community College

### Learning Garden

## Master Planning Project

Prepared By:

WATR 208 & WATR 261 Students

Fall Term 2010



#### Introduction

#### a. Learning Garden Overview

Vision: Transforming lives through gardening

Slogan: Cultivating sustainable solutions

Mission: The Learning Garden is a student-led initiative that grows healthy, sustainable food for the LCC community while providing learning, service, and leadership opportunities for students. The Learning Garden is an interdisciplinary education model that offers students the opportunity to work with others outside the classroom and to have fun.

#### b. Purpose of the Plan

The Learning Garden master plan seeks to clarify the mission and goals of the Learning Garden and its stakeholders, provide an outline and timetable for accomplishing these goals, and a vision for future growth and development.

#### c. Learning Garden Background and History

The Learning Garden Club was formed in 2006 to provide an education-based experience for students to learn about sustainability and local food production, discover how natural and human systems interact, gain skills in gardening and permaculture, and use creative problem solving through teamwork. It has slowly expanded under the leadership of the founder, Brendan Lynch, the first coordinator, Devon Bonady, and the current coordinator, Rosie Sweetman.

#### 1. Program Goals

General Goals:

- Create infrastructure to increase year-round food production
- Create an integrated modular functioning irrigation system
- Create physical infrastructure that will provide a classroom, meeting place, shelter, storage, generate renewable energy and enhance resource conservation

#### Food Goals:

- Strengthen the connection between the Culinary Arts program and the garden
- Provide 75% of the produce for the Renaissance Room
- Provide an item served each day for the cafeteria that is well-labeled and advertised
- Explore funding for a position as student organizer and food to table coordinator to educate the student body about the impact of their food choices and promote responsible food purchasing by the college
- Increase garden production by 25% each year through 2012

Education Goals:

- A credit class with the garden serving as an integral part.
- Strengthen and build partnerships with the administration and other college departments to improve the credibility of the garden.
- Track inputs/outputs and post informational signage to support educational goals.
- Build partnerships with school garden projects locally, nationally, and globally.
- Increase student involvement and develop methods for retaining more students. This may be reward based, through organized projects, curriculum, and/or a class at LCC.
- Develop student "internship" opportunities.
- Explore options to provide "future Internships".

General Ongoing Goals:

- Continually improve accessibility for all students
- Increase compost produced by 10% each year
- Implement sustainability in every aspect
- Public relations Increase awareness and the visibility of the Learning Garden
- **<u>2.</u>** Accomplishments (see Appendix A for the complete list)

Some of the Learning Garden accomplishments over the past year include:

- Assisted in the planning and execution of three special events on campus
- Organized and held a winter film series
- Harvested 685 lbs of produce during fall term for the culinary program
- Harvested over 100 lbs of salad greens for the Renaissance Room during spring term
- Coordinated a summer farm stand earning \$432 for the Learning Garden
- Expanded the cultivated area from 4000 square feet to 8,000 square feet
- Designed, coordinated and supervised a three credit internship for four students in Culinary Arts and Hospitality Management
- Assisted Sustainability, Water Resource Management, Forest Biology, and Photography classes (Service Learning)

#### 3. Staffing

- Rosie Sweetman, Coordinator
- Currently Currently two work study students
- Club members
- Volunteers

#### 4 Best Management Practices

- The LG is a multi-purpose organization emphasizing food production and education. All projects and programs should be evaluated for how they can support these multiple purposes. For instance, a project to increase the efficiency of irrigation to maximize production might very well become an educational tool for learning about alternative irrigation designs.
- All projects and programs should be evaluated in terms of impacts, positive & negative on the safety of any users. For instance, open ditches to alleviate drainage problems can become tripping hazards.
- All communications and outreach including interaction with stakeholders should be evaluated from the following aspects:
  - Fostering Inclusion
  - Fostering Collaboration
  - Recognizing Stakeholders as resources
- The LG is a "Point of Pride" for LCC. The design, layout, and storage of materials should be evaluated with the goal of creating and maintaining a pleasant and inviting atmosphere throughout the garden site. This just means that aesthetics are important in the design and storage within the garden. "Free" materials dumped "here and there" should be avoided.
- All projects and programs should be evaluated within the framework of the master plan to maximize their benefit. This means that the order in which projects are begun should make sense in terms of the other projects in the plan.
- New projects should be initiated only when there are adequate and dedicated resources to bring them to completion. This means that starting projects without enough help to complete them will overload the garden manager with too many "irons in the fire". "Slow and steady wins the race"
- All LG decisions should be evaluated with sustainable practices in mind to support the goal that the learning garden "Work with the environment, not against it". This means that the use of expedient, but ecologically questionable practices and substances should be avoided. A subset of this would be to take environmental constraints (such as soil characteristics or drainage) into account in the design of any project.
- All projects and programs should be evaluated, and should support the goal of fostering a good relationship with faculty, students, and administration. Never miss a chance to "sell" the LG.

#### 5. Facilities Overview

Learning Garden Site Description:

The learning Garden is a small plot located on LCC campus. The site is sandwiched between the child care center and the Russell Creek on the west side of the campus. The size of the site is approximately 2/3 acres, half of which is arable. half of which is arable.

Soil Type:

Hydric soils. Additional soil testing is needed.

#### Water Supply:

3" pressurized line entering the site underground from the east controlled by a valve approximately 93' east of fenced garden area along the southern edge of the plot. The line has a static pressure of 52psi and a flow rate or 360 gph (tested through a ¾" spigot). There are two 1" pvc laterals with spigots located along the south edge of the fenced garden (A). The depth of the supply pipe is unknown, but seems shallow.

The 3" line terminates at the southwest corner of the fenced garden with a "wye" fitting. From the north split of the "wye" it is reduced to a 1" pvc pipe with a butterfly valve then to a riser with a spigot.

From the west end of the "wye" it is reduced to a 2" black flexible line which runs to the second fenced garden area (B) where it is further split into four  $\frac{3}{4}$ " lines and valves.

#### Electricity:

Currently there is no electricity located on site. The closest possible electric source is a 70amp panel located on an existing greenhouse approximately 175' to the east of the LG, and is administered by the campus grounds department. There is also what appears to be a low voltage line concealed in an underground valve control box located about 70' east of the fenced garden.

#### Structures:

Currently the site has a wash station, a tool shed, and compost bins. There are plans existing for future site improvements which include a 10' by12' sheltered area east of the eastern garden (drawing included in appendix A) a greenhouse, and hoop houses.

The sheltered area is under construction, and may be utilized as a resting area for workers in the garden and other uses. The greenhouse will be a pre-engineered 20ft x 48ft structure and located east of the sheltered area. It will have electrical service in it which could be used for automation of the irrigation system.

The hoop houses will be located in multiple places inside the enclosed gardens and will measure  $12' \times 50'$  and will be oriented north to south along their lengths. The irrigation to these hoop houses will be provided by the modular system described earlier.

#### Irrigation:

Currently, the garden is irrigated during the dry season by various methods - impact sprinklers, soaker hose, and manual. Irrigation improvements will be implemented with the goals of, 1) improving productivity of the garden 2) reducing the amount of water used to irrigate each sq ft (increase efficiency) 3) reduce labor. To achieve this, a new irrigation system will be installed.

The system will begin with a connection to the 3" supply line and reduction to a new 2" trunk line which will run north, through an appropriate back-flow prevention device, into the garden area to a point to be determined (50' to 60' north of 3" valve) then extended west and east to service the existing and planned garden areas.

Depending on the chosen irrigation design, three or more 1" laterals will intersect the trunk line and project west. The lateral line(s) will be fitted with a number of valves (manual butterfly or solenoid activated) with quick disconnect fittings. From the fittings, the modular delivery lines will be attached to bring water to the plantings.

Modular delivery lines will be fitted with different types of irrigation devices, (drip tape, sprayers etc.) The different modular delivery lines can interchange easily dependent upon the requirements of the garden. DripWorks USA has been identified as the preferred vendor for supplying irrigation equipment and design.

#### Irrigation Manifold:

The Irrigation manifold is the modular portion of the irrigation system which will be connected to the valves from the conveyance line to distribute water to the individual rows. It will be constructed with  $\frac{3}{4}$ " schedule 40 pvc which will be supplied by a flexible hose connected to the conveyance line valves. The water will then be directed through six quick connector couplings to either drip tape or the micro-spray system.

#### Fencing:

Currently there are two small garden areas which are fenced, the eastern garden and the western garden. Ideally, the entire Learning Garden area would be enclosed with fencing.

There are some considerations which need to be made in planning the course of the fence (fire lane, jogging path, access etc.) One option in the fencing would be to connect the new fencing to the south western corner of the eastern garden, extend it west along the top of the bank of the drainage to the south of the parcel, turn north at the top of bank of Russell Creek and follow the creek to a point west of the Child Care Center's play yard fence, turn east and terminate at the south-west corner of the Child Care Center's play yard fence. The Child Care Center's play yard fence.

Another section of fencing will then connect to a point along the Child Care Center's play yard fence and turn south to terminate at the north-western corner of the eastern garden area being careful to stay west of the proposed fire lane, or install gates to allow access. Gates will be installed at points along the perimeter fence as determined by Learning Garden Staff, LCC, and other stakeholders. There is approximately 350' of fence fabric located on site. Approximately 900' of fencing are needed to accomplish this.

#### Creek Restoration:

The creek surrounding the garden site is currently inundated with invasive, non-native species of Himalayan blackberry, scotch broom and teazel. In cooperation with Coast Fork Willamette Watershed Council, Lane County Public Works and the biology and science departments at LCC, we will restore the riparian area to native plants and shrubs.

We will need to get input from all partners in the project as to what methods will be best in the restoration process. This will outline what to remove and plant, how maintenance will be accomplished and the techniques to use. We plan to put education signs and create and interpretive trail. Approximately 900 feet of fencing is needed.

#### Drainage:

Drainage is an issue which will need to be handled by a multifaceted approach. Garden beds will be sheet composted and built-up to achieve a more uniform slope to channel run-off into a bio-swale which will flow into a rain garden (natural low point at the west end) located at the western end of the Learning Garden near Russell Creek. The rain garden will then spill into Russell Creek via a diffuse sheet spillover. The bio-swale will be constructed using an existing ditch which will be expanded to roughly 10' wide with a gradual slope to the flow line of the ditch.

Garden "A":

The area designated garden "A" is the fenced garden area at the south-east end of the garden. The proposed usage of this area will be as a demonstration site. Here different irrigation methods, alternative plantings, and various soil amendments could be tested and vetted.

#### Garden "B":

The area designated garden "B" is the fenced area at the south end of the garden. The proposed use for this area will be to incorporate it into the larger garden area.

#### Garden "C":

The area designated garden "C" is the unfenced area north of the existing path currently being used as mounded garden area. The proposed use of this area will be to expand it to encompass as much planting area as feasible.

#### 6. Development Plan

- a. Proposed Projects
- Production Goals
  - o Increase production in garden by 25% each year
  - Provide 75% of all produce used by the Renaissance Room
  - o Focus on fall, winter, and spring production
- Production Projects
  - Build hoop house (10' x 50')
  - Expand garden ( sheet composting )
  - o Remove trees in garden and near greenhouse site
  - o Build deer fence surrounding entire property (see site drawing)
  - o Improve access for material drop off
- Irrigation Project (see design proposal and proposed specifications for water supply extension and irrigation system upgrades in appendix)
  - o Re-orient beds to run north-south
  - o Automate irrigation
- Creek restoration
  - o Remove invasive/non-native species along riparian area
  - o Plant natives and maintain
  - o Create educational signage (interpretive trail)

- Other projects
  - Improve drainage (see site drawing)
  - o Build tool shed
- Education
  - o Develop curriculum for credit class (non-transferrable )
  - o Create signage
- Current projects
  - Covered entry way: "Gabled Garden Entry Way "
  - o Greenhouse
  - Create map of property
- Concerns
  - o Child Care Center
  - o Running path
  - o Accessibility
  - o Geothermal cable
  - b. Resources requirements
    - i. Funding

The Learning Garden is primarily funded by a \$1 per year student activity fee. The Culinary Arts Department makes a \$2000 per year down payment for produce with an agreement that additional payments will be made if the amount of produce exceeds a certain level. A summer produce stand provides some funds. There is a \$10,000 grant that can be used to pay some of the cost of the greenhouse.

ii. Volunteers

The Learning Garden relies on club members and other volunteers for everything from planting to harvesting.

#### lii. In kind

The Learning Garden's rainwater harvesting system was funded by EWEB. A local nursery provides starts. The grounds crew assists in the procurement of useful materials that would otherwise be recycled.

#### 7. Planning Environment

a. LCC Planning Goals and Process

The Facilities and Planning Department is responsible for formal planning and provides supervision and management for the Learning Garden.

#### b. Learning Garden Stakeholders

A stakeholder identification process was initiated and stakeholder input meetings were conducted with the Child Care staff and Learning Garden Club members. The identification of stakeholders should be an ongoing effort.

- College administration and planning
- Grounds lead
- Project coordinator
- Learning garden coordinator
- Lane County Land Management
- Learning Garden club members
- Faculty members
- Others (see Appendix B for a complete list of stakeholders)
- c. Regulatory Environment

The Learning Garden has opened a channel with Lane County to seek a set of guidelines for the proposed projects.

#### Appendix A: Learning Garden Specialist Accomplishments

#### October 1 2009 to September 1 2010

Assisted in the planning and execution of three special events on campus, collaborating with staff in CAHM and Health: Sustainability Day Harvest Festival October 2009, Earth Day April 2010, Health and Sustainability Fair May 2010

Organized and held a winter film series for eight weeks during winter term, five hours of films per week

Developed promotional materials including an educational powerpoint presentation about the garden, a stand up poster for the Learning Garden Club Table, and over ten different event posters and flyers

Coordinated the Harvest of over 685 pounds of produce fall term for the culinary program with an approximate value of \$290.00

Coordinated the planting and harvest of over 100 pounds of salad greens for the Renaissance Room and special events spring term with an approximate value of \$600.00

Worked with students and staff involved with the club on creating a new mission and vision statement as well as developing and prioritizing goals for the next several years

Procured materials and coordinated student volunteers in the expansion of the cultivated garden area, doubling its size from approximately 4000 square feet to 8000 square feet.

Procured donations from local and national sources for seeds, soil, and tools totaling over \$1508

Gathered information about different options for creating an Americorps position for various projects related to Learning Garden club interests

Organized and facilitated meetings with chefs and administrators in CCS twice per term to enhance communication and collaboration

Maintained the club e-mail account while adding hundreds of students and delivering weekly e-mail announcements for over 30 weeks

Supervised a work study student for Winter Term 2010 and posted a new position through the FMP department

Supervised over 100 different student volunteers throughout the year with a total of 415 volunteer hours

Designed, coordinated and supervised a three credit internship for four students in Culinary Arts and Hospitality Management Students Summer Term 2010

Coordinated a summer farmstand in which student interns harvested and sold produce weekly raising \$432 for the Learning Garden

Coordinated the growth and summer harvest of 95 pounds of garlic and 210 pounds of a variety of fresh produce

Assisted the following classes by developing special projects in the garden for students to complete:

W10 Intro to Sustainability Class (Sonja Mae) projects: Vegetable Washing Station and Publicity

W10 Water Resource Management (Steve West) group projects: plumbing sinks, bathtub washer, laying pipe for rainwater tank water line to garden

W10 Forest Biology class soil samples and garden bed prep

W10 Forest Biology class (Pat Boleyn) project: Planting native edibles

S10 Intro to Sustainability Class (Sonja Mae) projects: Building a picnic table for the garden, Building winter cloches for the garden, AASHE STARS rating for Dining Services at LCC

S10 Photography students: Photos of the garden and students working in the garden for marketing purposes

Presented information about the garden to the following courses:

W10 Forest Biology and Intro to Ecology (Pat Boleyn)

W10 Intro to Sustainability (Sonja Mae)

S10 Women's Bodies Women's Selves (Patsy Raney)

S10 Environmental Politics (Stan Taylor)

Supervised student volunteers for 2 or more hours per week throughout the school year including:

W10 Service Learning students from various classes: Global Health (Susie Cousar), Water resources (Steve West), Botanical Beginnings (Gail Baker).

S10 Service Learning students from various classes: Global Health (Susie Cousar), Women's Bodies Women's Selves (Patsy Raney)

#### Appendix A: Stakeholders

### Learning Garden Stakeholder List

Disclaimer: Due to the transitory nature of the people and positions of the stakeholders listed below, it is expected that the list will not always be up to date.

	Stakeholders	E-Mail	Telephone	Involvement
College Administration and Planners	Dave Willis Sonya Christian	willisd@lanecc.edu Christians@lanecc.edu spildem@lanecc.edu	463-5566 463-5302 463-5200	FMP Director Vice Pres. Of Instruction LCC President
	Mary Spilde Bob Mention	mention@lanecc.edu	463-5747	FMP/Bond Project Manager
Grounds Lead	Frank Drengacz	drengaczf@lanecc.edu	463-5567	Lead Groundskeeper
Project Co-ord. Sustainability Office	Jennifer Hayward	haywardj@lanecc.edu	463-5594	Sustainability Coordinator
Learning Garden Co-ord.	Rosie Sweetman	Sweetmanr@lanecc.edu	463-5899	Learning Garden Specialist
Property Management	DEQ			
	Oregon Dept. of State Lands			
	Lane Co. Public Works			
	U.S. Army Corp. of Engineers			

Faculty	Susie Cousar	<u>cousars@lanecc.edu</u>	463-5271	Health and PE Instructor
	Jackie Fern	<u>fernj@lanecc.edu</u>	463-3221	Science Instructor
	Sarah Whitney	whitneys@lanecc.edu		Science/Energy Program Instructor
	Pat Boleyn	boleynp@lanecc.edu	463-5086	Science Instructor
	Gail Baker	bakerg@lanecc.edu	463-5085	Asst. Professor Biology
	Joe McCulley	mcculleyj@lanecc.edu	463-3516	Hospitality Management Instructor
	Clive Wanstall	Wanstallc@lanecc.edu	436-3507	Executive Chef
	Lisa Aherin	aherinl@lanecc.edu	463-3504	Culinary Instructor
	Sonya Mae	maes@lanecc.edu	463-5451	Science/Energy Program Faculty
Childcare Center	Sue Norton	nortons@lanecc.edu	463-3301	Dept. Management Coordinator
	Georgia Soto	sotog@lanecc.edu	463-5794	Child Care Center Coordinator
Learning Garden Club Members	ShayAnne Woods	shywoodrose@gmail.com		Learning Garden Club President
	Toby Kubler	tobykubler@gmail.com		LGC Treasurer
	Ethan McCoy	Mccoy.ethan@gmail.com		LGC Member
	Scott Alexander	Seapotentialdifference@gmail.com		LGC Member
	Tashiko	Punkjews22@hotmail.com		LGC Vice President

Conference and	Food Services			
Culinary Services	Michael O'Neal	Onealm@lanecc.edu	463-5672	Food Services Manager
	Center for Meeting and Learning	<u>cml@lanecc.edu</u>	463-3500	
	Culinary and Hospitality		463-3503	
	Julie Fether	<u>fetherj@lanecc.edu</u>	463-3518	Special Projects Coordinator
	Brian Kelly	kellyb@lanecc.edu	463-3510 or 463- 5672	Food and Beverage Manager
Students				
Recycling	Mike Sims	simsm@lanecc.edu	463-5569	Recycling and Surplus Property Coordinator
General Public(Farmers, Vendors, Neighbors)				
Coast Fork Willamette Watershed Council	Pam Reber	coastfork@willamette.net	767-9717	Executive Director