Lane Community College

Environmental Impact Report

2003/2004

Energy use, tracking, and feedback

Energy use, tracking and feedback

INTENT: Encourage energy efficiency. Facilitate action by ensuring that Lane collects and reports information on its own energy use practices.

INDICATOR DATA:

(1) Use

Total energy use for heating, cooling, and electricity (MMBtu) per total student and staff FTE per year: 9.03

Total energy use for heating, cooling, and electricity (Btu) per building square foot: 91,460

(2) Tracking. Provide a description of how Lane tracks energy use and cost data.

There is clear detailed data on LCC utilities to be found in Facilities files for numerous years past. We have one main electric meter for the main campus and 8 sub-meters on main campus (Buildings 1,5,8,9,16,19, Center and Child Care). The total electrical usage also includes facilities off main campus (Florence, KLCC, McKenzie, Cottage Grove, Wildish, Flight Tech Center, Flight Tech Operations, Flight tech Hanger, Aviation, DTC, Siltcoos Cabins & Boathouse).

Gas meters include the main heating meter to the boiler, IGI, Main campus loop, Campus Services, Paint Booth, Welding, Flight Tech. Operations, Flight Tech. Center, Aviation, Cottage Grove, Wildish Bldg.

(3) Feedback. Provide a description of how Lane provides feedback to campus users about energy use.

Two years ago, Facilities agreed to change the temperature set points for the seasons. When those changes occurred, Facilities sent an all campus e-mail out to remind the campus of the change. There was more promotion of energy conservation when the Energy Management Committee was active. To date Facilities have not had an employee designated to promote energy conservation thus the work to raise awareness has been slow.

BENCHMARK:

(1) *Use*: Total energy use for heating, cooling, and electricity does not exceed 79,300 Btu per building square foot.

(2) *Tracking*: The campus has complete and clear records of its energy use, and there exists a regular, on-going reporting process for all energy use and cost data to relevant decision-makers.

(3) *Feedback*: The campus Facilities Department provides information to campus users about energy use in ways that raise awareness and facilitate action.

	ANALYSIS: Has Lane met the benchmark? **No.** Why or why not? <u>No real effort is being made to conserve energy by staff generally</u>. However, the college is not far from the benchmark. With a concerted educational and promotional effort the college could reach the benchmark, which is approximately 15% reduced energy use. Recommended strategies for improving performance in this area? The following strategies are recommended. • Develop policy that directs staff to use energy efficiently while not sacrificing productivity. • Designate an individual who is responsible for developing a resource conservation program that will motivate staff to conserve energy, water, and other commonly used resources. • Submeter all buildings so that the college can have more detailed energy use tracking. • Develop a competition between buildings to reduce energy consumption. • Commission the recent campus-wide installation of direct digital controls of the heating ventilation and air conditioning units. • Schedule HVAC and lighting controls more precisely. • Consolidate classes so that additional building shut downs may occur. • Review buildings for nighttime shutdown (Building 19 in particular). • Maximize use of lighting controls. • Continue analysis of where lighting retrofits and delamping should occur. • Improve security of thermostats so that staff who are not approved to operate thermostats cannot change thermostat settings. • Develop a program that ensures removal of electric resistance space heaters from campus and replaces them with radiant panel space heaters, if needed. • Increase installation and use of motion sensors for lighting. • Reduce temperature of hot water delivered to faucets and showerheads by 1 or 2 degrees F. • Turn off hot water circulation system at night.

Report created by: Roger Ebbage and Robin Geyer

Date: 10/28/04

PLEASE LIMIT REPORT TO TWO PAGES
Supporting data and calculations should be attached

ENERGY INDICATOR FOR FY 2003/2004		
Electricity (kwh)[1]	15,298,907	
Electricity (MMBtu)	52,200	
Natural gas (therms)[1]	504,249	
Natural gas (MMBtu)	50,425	
Total energy (MMBtu)	102,625	
Total energy (Btu)	102,624,770,684	
FTE students (actual)[2]	10,700	
FTE budgeted staff[2]	672	
Total campus users (FTE students + FTE staff)	11,371	
Building square footage[3]	1,122,078	
Total energy per student FTE per year	**9.59**	
Total energy per campus user per year	**9.03**	
Total energy use per building square foot per year (MMBtu/ft2)	**0.09**	
Total energy use per building square foot per year (Btu/ft2)	**91,459.57**	
1 Information on the Facilities Management and Planning server in the folder Office on 'Fmp1\Data'(J:)\group\Utilities and in a three ring binder labeled "Utilities Summary" that is located in Building 7, Facilities lobby, Robin Geyer's workstation.		
2 Information from Institutional Research, Assessment and Planning, Craig Taylor		
3 See Attachment 1 "Building Square Footage"		

Building Square Footage

Main Campus

Building #	Building Name	1996	New SqFt by 2002	Total SqFt in 2002
000	Center	176,664	0	176,664
001	Student Services	0	37,477	37,477
002	Business	21,045	0	21,045
003	Administration	17,907	0	17,907
004	Health Technology	48,482	0	48,482
005	Physical Education	87,992	0	87,992
006	Performing Arts	37,465	10,691	48,156
007	Campus Services	35,481	6,765	42,246
008	Welding Technology	0	20,593	20,593
009	Auto/Diesel Technology	37,529	0	37,529
010	Air Technology	35,014	0	35,014
011	Art/GED	47,636	0	47,636
012	Machine Technology	59,658	0	59,658
013	Electronic Annex	0	6,720	6,720
015	Electronics	18,234	180	18,414
016	Science	31,792	59,863	91,655
017	Forum	24,520	0	24,520
018	Industrial Technology	20,921	0	20,921
019	Work Force Training	38,774	41,114	87,888
020	Apprenticeship Annex	7,722	-4,290	3,432
024	Child Care Center #1	0	2,967	2,967
025	Child Care Center #2	0	3,273	3,273
026	Child Care Center #3	0	6,270	6,270
027	Child Care Center #4	0	4,264	4,264
	Main Campus Sub-Total	**746,836**	**195,887**	**950,723**

Other Main Campus Facilities

Building #	Building Name	1996	New SqFt by 2002	Total SqFt in 2002
023	FM&P Nursery	0	1500	1500
029	Comminutor Shed	0	660	660
030	Old Day Care Modular	1848	0	1848
031	Old Day Care Modular	1848	0	1848
032	FM&P Storage	0	2240	2240
033	Test Cells	3100	0	3100
034	Cooling Tower	1752	0	1752
035	PA Storage	2890	0	2890
036	PE Storage	1430	0	1430
037	Greenhouse	240	0	240
038	Chemical Storage Facility	297	0	297
n/a	3 Stop Exterior Elevator	0	100	100
n/a	3 Stop Exterior Elevator	0	160	160
	Other Main Campus Facilities Sub-Total	**13405**	**4660**	**18065**

Branch Campuses

Building #	Building Name	1996	New SqFt by 2002	Total SqFt in 2002
040	Wildish	12,800	150	12,950
041	DTC	56,508	0	56,508
043	Flight Tech Operations	3,680	0	3,680
044	Flight Tech Center	5,049	0	5,049
045	Flight Tech Hanger	3,900	0	3,900
046	Aviation Maintenance Training Facility	23,400	0	23,400
048	Cottage Grove Center (old)	7,900	0	7,900
049	Cottage Grove Center (new)	0	18,613	18,613
050	Florence Center	9,299	6,528	15,827
051	Siltcoos Station	2,570	0	2,570
057	McKenzie CLC		2,893	2,893
	Branch Campuses Sub-Total	**125,106**	**28,184**	**153,290**

GRAND TOTAL **1,122,078**

Water use, tracking, and feedback

Water use, tracking, and feedback

INTENT: Encourage efficient water use. Ensure that the institution collects and reports information on its own water use practices in ways that facilitate action.

INDICATOR DATA:

(1) Use

Total water use (gallons) per building square foot per year: 26.79

Total water use (gallons) per campus acre per year: 195,722.56

Total water use (gallons) per FTE staff per day: 122.03

Total water use (gallons) per campus user (FTE staff + FTE students) per day: 7.21

(2) Tracking. Provide a description of how Lane tracks water use and cost data.

There is clear detailed data on LCC utilities to be found in the Facilities files for numerous years past. We have one water meter for the main campus, so water use for irrigation is not tracked separately.

(3) Feedback. Provide a description of how Lane provides feedback to campus users about water use.

Very little attention is given to water consumption unless Facilities Office Support Specialist notices an anomaly and alerts the trades to a possible problem. Campus users in general are not provided feedback on water use.

BENCHMARK:

(1) *Use*: Water use does not exceed 3.6 gallons per campus user per day or 61 gallons per FTE staff per day. [NOTE: No relevant or widely accepted benchmark exists. However, EWEB suggested in a letter to Lane Community College in April 2004 three water conservation measures that they estimate would reduce the college's water use by 50%. So the benchmark was set at 50% of the current amount. EWEB also provided an average and typical water use for educational facilities that is 118 gallons/person/day. This number is 4 gallons/person/day lower than our 122.03 gallons/FTE staff/day, however, EWEB's 118 gallons/person/day is not meant to be a benchmark, just an average for future planning. Please see attached notes from conversation with EWEB about benchmarks and conservation strategies dated October 5, 2004.]

(2) *Tracking*: The campus has complete and clear records of its water use, and there exists a regular, on-going reporting process for all water use and cost data. Water use for irrigation is tracked separately from other water use.

(3) *Feedback*: The campus Facilities Department provides information to campus users about water use in ways that raise awareness and facilitate action.

	ANALYSIS: Has Lane met the benchmark level? **No.** Why or why not? Older buildings do not incorporate water saving features that are required by code in new buildings. Plumbers have begun retrofitting old toilets that use 3.5 gallons of water per flush (gpf) with auto flushers that use 1.6 gpf. Landscape Maintenance staff work toward conserving water by mostly planting plants that will only need water to establish and most lawns are not watered during the summer. However, water efficiency upgrades and water conservation promotions have not been a focus of the college. Recommended strategies for improving performance in this area? • Ensure that all old toilets that use 3.5 gallons of water per flush (gpf) are retrofitted with auto-flushers or valve diaphragms with water savers that use 1.6 gpf. • Ensure that all old urinals are retrofitted with auto-flushers that use 1.0 gpf. • Purchase computerized irrigation system that reads weather daily and determines whether plants need to be watered. The computer system also detects breaks in irrigation lines, notifies user, and shuts down the zone for large breaks. Installation of this computerized system is estimated to decrease our water use by 33%. • Install ozone generators in the laundry. Ozone whitens laundry like chlorine, but is less environmentally hazardous and would require one less rinse cycle. (See attached letter from EWEB) • Utilize all effluent from the future Package Wastewater Plant. Water should be used for irrigation and mechanical cooling water. Lane should also investigate whether treated water could be used in the laundry. (See attached letter from EWEB). • Provide campus users with information about water conservation efforts that are taking place and provide water saving tips that individuals can accomplish. • Install rainwater catchment systems that connect to roofs and are used for irrigation or toilet flushing. EWEB estimates that these upgrades would decrease our water use by more than 50%.

Report created by: Robin Geyer & Jennifer Hayward

Date: 10/28/04

PLEASE LIMIT REPORT TO TWO PAGES
Supporting data and calculations should be attached

TO: **File**

FROM: **Jennifer Hayward**

DATE: **10/5/04**

RE: **Conversation with Steve West, EWEB Water Management Specialist**

I called Steve on 10/5/04 to ask if he could recommend an appropriate benchmark for water use that the college could use. Steve indicated that EWEB contracted a planning & management consulting firm to prepare a demand forecast for them in 1995. Steve provided me with the water use numbers that were given in this report. These numbers follow.

- Water use for government facility (national): 106 gallons/person/day
- Water use for government facility (local – EWEB customers): 348 gallons/person/day (510 summer; 185 winter)
- Water use for educational facility: 118 gallons/person/day (146.8 summer; 89.6 winter)

Steve said that for government facilities "person" means FTE staff. Steve wasn't 100% sure if "person" in the educational facility only includes FTE staff and not FTE student, but he is almost positive that is does only include paid staff. This is not stated explicitly in the report, but Steve called some of the people who worked on this report and it was their recollection that "person" was just FTE staff.

Note that Lane's water use per FTE staff per day is 122. This is 4 gallons per person per day greater than the average.

I described some of the water conservation programs and plans that the college had to Steve. I told Steve that we are retrofitting old toilets and urinals with auto-flushers that decrease water use to 1.6 gallons per flush (gpf) for toilets and 1.0 gpf for urinals. Steve indicated that there might be EWEB incentive money available for this project. I also told Steve that we are planning to purchase a central irrigation controller. Steve indicated that there might also be incentive money or no-interest financing available for the irrigation controller. Steve also recommended that the college get on the waiting list for the EWEB Commercial Industrial Landscape Audit (CILA). This audit helps business refine their water needs and usually results in decreased water use with no reduction in landscape quality.

WATER INDICATOR FOR MAIN CAMPUS FY 2003/2004		
Water (gallons)[1]	29,912,279	
Building square footage[2]	1,116,615	
Campus acres	152.83	
FTE students (actual)[3]	10,700	
FTE budgeted staff[3]	672	
Total campus users (FTE students + FTE staff)	11,371	
Water usage (gallons) per building square foot per year	**26.79**	
Water usage (gallons) per campus acre per year	**195,722.56**	
Water usage (gallons) per FTE staff per day	**122.04**	
Water usage (gallons) per total campus user per day	**7.21**	
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049	Cottage Grove Center (new)	0	18,613	18,613
050	Florence Center	9,299	6,528	15,827
	Branch Campuses Sub-Total	**122,536**	**25,291**	**147,827**

GRAND TOTAL **1,116,615**

Recycling rate, infrastructure, and systems

Recycling rate, infrastructure, and systems

INTENT:
Provide the physical and organizational infrastructure to make recycling convenient for campus users.

Provide a concrete benchmark for campus recycling and waste management efforts.

INDICATOR DATA:

(1) Recycling rate: 52%

[NOTE: Awaiting more accurate data on yard debris, kitchen grease, and donated food recycling weights, but this more accurate data is not expected to change recycling rate more than 0.50%]

(2) Recycling infrastructure

Describe locations where recycling collection is provided.

Recycling collection containers for paper, cardboard, and glass, plastic, and metal containers are provided in every building except for Buildings 9 (Auto/Diesel) & 10 (Aviation Maintenance). A scrap metal recycling drop box is convenient to these two buildings, however. Recycling containers for paper, cardboard, and glass, plastic, and metal containers are provided on every floor of multi-level buildings except for Building 15 only has recycling collection on the second level.

A full list of recycling containers can be found at: www.lanecc.edu/recycle/location.htm

(3) Materials collected for recycling

List materials collected for recycling.

Antifreeze
Ballasts
Batteries
Cardboard
Construction & demolition waste
Fluorescent lamps and other mercury containing bulbs
Food waste
Glass (bottles and jars)
Metal
Motor oil
Pallets
Paper
Plastic (tubs, bottles, and jars #s 1-5 & 7)
Sawdust from carpenter shop
Surplus property (includes electronics, equipment, furniture, and office supplies)
Wood
Yard debris

(4) **Recycling education.** Describe recycling education efforts.

2003/2004 Recycling Education Efforts

a) Recycling department conducted waste audit with 2 environmental studies classes in October. Recycling Coordinator presented information on waste reduction to both classes before and after waste audits.
b) Daily announcements promoting recycling (7/15/03, 10/28/03, 11/3/03, 11/5/03, 11/6/03, 4/19/04, 4/21/04.
c) Daily announcements advertising Earth Day activities (4/21/04, 4/22/04).
d) Earth Day waste audit demonstration (4/22/04).
e) Bands and education tables in Bristow Square for Earth Day event. Recycling presented information over microphone between band sets.
f) Torch article covering waste audit (5/13/04).

BENCHMARK:

(1) *Recycling rate*: The total recycling rate is equal to or greater than 50% (as a share of the total campus solid waste stream, as measured by weight or volume).
(2) *Recycling infrastructure*: Recycling infrastructure is located in the following areas:
    - All campus buildings
    - Computer labs with printing facilities
    - Outdoor areas of high use, especially thoroughfares
(3) *Materials collected for recycling*: Collection bins for all locally available, major recyclables are provided. Materials include metal, glass, plastic, cardboard, and paper. Universal wastes, including batteries, fluorescent tubes, motor oil, and antifreeze is also recycled.
(4) *Recycling education*: Education about campus recycling practices to incoming students, faculty, and staff is provided. There is ongoing education to the campus community that keeps campus users informed and engaged in recycling.

ANALYSIS:

Has Lane met the benchmark level? **Yes. Lane has exceeded the benchmark level.**

Why or why not? College departments focus on recycling every item that they can possibly recycle. Most of campus community believes that recycling is important. College recycling department strives to accommodate all request recycling needs.

Recommended strategies for improving performance in this area?

- Place paper and container recycling containers next to every garbage can.
- Provide more appropriate looking recycling containers. Paper recycling barrels are currently used 55 gallon barrels. It is not intuitive to many people new to campus that these are for recycling.
- Provide more and improved signage on and around waste stations.
- According to five waste audits conducted over the last four years, "compostables" have been the biggest recyclable waste stream in our trash (about 35%) with paper being the 2nd largest recyclable material (about 15%). Working on improving composting opportunities would improve the recycling rate, but for most items in the "compostable" waste stream, working on promoting reusable alternatives may be a better environmental option. For example, paper towels from the bathroom could be switched to cloth towels. Reusable plates and utensils could be emphasized over disposable. Portion control could be emphasized over having wasted food that needs to be composted.
- Provide more education.
- Track recycled amounts and weights more accurately.
    - Recycling weights for the following materials were estimated from volumes:
        - Construction and demolition waste
        - Fluorescent lamps and other mercury containing bulbs
        - Glass
        - Plastic
        - Wood
        - Yard debris
    - Recycling volumes and weights were estimated for these items:
        - Glass*
        - Plastic*
        - Pallets
        - Kitchen grease
        - Cafeteria food donated to Eugene Mission
- Set up purchasing programs that will reduce packaging (particularly Styrofoam).

*Glass and plastic recycling volumes were provided by the garbage hauler from July 1 through January 31 of the reporting year. Volumes were estimated from February 1 through June 30 based on the volumes of the previous months of the reporting years.

Report created by: Jennifer Hayward & Dianne Burns
Date: 10/27/04

Recycling Rate in FY 2003-2004

Material	Weight (tons)
Garbage	
Garbage Main Campus - compacted[1]	265.78
Garbage Main Campus - loose garbage[1 & 2]	4.28
Construction & demolition waste drop box[1 & 3]	13.77
Medical Waste[1 & 4]	0.24
Garbage Downtown Center, Wildish, Airport[1 & 2]	32.76
TOTAL	**316.82**
Recycling	
Construction & demolition waste drop box[1 & 3]	16.83
Wood - construction & demolition waste drop boxes[1 & 5]	7.81
Wood - grounds debris[6]	27.27
Other grounds debris[6]	11.85
Paper[7]	73.98
Cardboard[7]	41.96
Glass[8]	5.89
Plastic[8]	0.88
Metal[9]	96.28
Food waste (preconsumer waste from kitchen)[10]	13.47
Saw dust from carpenter shop[10]	0.28
Batteries[11]	2.20
Fluorescent lamps, other bulbs, and ballasts[11]	1.06
Motor oil[11]	2.73
Antifreeze[11]	0.29
Pallets[12]	10.00
Surplus property that was reused by another organization or recycled[13]	30.44
TOTAL	**343.21**
RECYCLING RATE (%)	**52.00**

1 Information from garbage hauler, Royal Refuse, invoices that are filed in Building 7, Room 203B, Jennifer Hayward's office, File: "Garbage"; file folder: "Garbage POs & Costs"

2 Calculations showing conversions of loose cubic yards to tons are shown in Attachment 1 "Garbage"

3 Construction & demolition waste goes through a Material Recovery Facility (MRF). Royal Refuse recycles an average of 55% of all of the material that goes through the facility. So 45% of the C&D waste is listed under garbage and 55% of it is listed under recycling.

4 Medical waste tonnage calculations are shown in Attachment 2 "Medical Waste"

OVER

5 40 cy of contstruction debris wood waste were hauled off campus. Tons/cubic yard of wood waste were estimated by averaging the tons/cubic yard of 10 construction & demolition waste hauls.

6 See Attachment 3 "Wood & Yard"

7 Information from Weyerhaeuser receipts located in Building 7, Room 203B, Jennifer Hayward's office, 3-ring binder labeled: "Paper Recycling"

8 See Attachment 4 "Containers"

9 Information from vendor report that is filed in Building 7, Room 203B, Jennifer Hayward's office, File: "Metal Recycling." Vendor is Schnitzer Steel.

10 See Attachment 5 "Food"

11 See Attachment 6 "Universal Waste"

the Campus Refuse Profile of the Campus and University Recycling Council (CURC).

13 Surplus property includes vehicles, equipment, furniture, electronics, and office supplies. Attachment 7, "Surplus Property" shows an itemized list of the surplus property included.

Garbage Volume to Weight Conversions

Garbage - Downtown Center, Wildish, RTS, and Flight Tech				
7/1/03 thru 9/28/03				
Cubic yards picked up per week	8	[1]		
number of weeks	13			
total cubic yards	104			
9/29/03 thru 6/30/04				
Cubic yards picked up per week	16	[1]		
number of weeks	39			
total cubic yards	624			
Total 2003/2004 FY cubic yards	728			
Pounds per loose cubic yard	90	[2]		
Total 2003/2004 FY pounds	65520			
Total 2003/2004 FY tons	**32.76**			

Garbage - Main Campus		
Garbage Main Campus - loose (cubic yards)	95.00	[1]
Pounds per loose cubic yard	90	[2]
Total 2003/2004 FY pounds	8550	
Total 2003/2004 FY tons	**4.275**	

1 Information from garbage hauler invoices that are filed in Building 7, Room 203B, Jennifer Hayward's office, File: "Garbage"; file folder: "Garbage POs & Costs"

2 Campus Refuse Profile of the Campus and University Recycling Council (CURC).

Medical waste tonnage calculations

Medical waste (4.3 cf box)	20	[1]
Pounds per 4.3 cubic foot box	23.76188	[2]
Medical waste (pounds)	475.2376	
Medical waste (tons)	0.237619	

1 Information from garbage hauler invoices that are filed in Building 7, Room 203B, Jennifer Hayward's office, File: "Garbage"; file folder: "Garbage - Biohazard Waste"

2 Average pounds per 4.3 cubic foot box were calculated using information from FY 2003/2004 medical waste reciepts in the above referenced file

Wood and Yard Debris Recycling

Date	Material	Container Size (cubic yards)	Cost	Date Paid	Notes		
	Yard Debris	30	$160	8/5/03			
	Wood	30	$160	9/5/03			
	Yard Debris	20	$140	9/5/03	Receipt not in file. Called LFP to		
	placed 2 boxes	n/a	$80	11/12/03	get info on what was hauled.		
9/30/03	rental fee	n/a	$100	11/12/03			
9/30/03	rental fee	n/a	$100	11/12/03			
10/30/03	rental fee	n/a	$100	12/8/03			
10/30/03	rental fee	n/a	$100	12/8/03			
11/26/03	Wood	30	$160	1/26/04			
11/26/03	Yard Debris	30	$160	1/26/04			
12/30/03	rental fee	n/a	$100	2/5/04			
12/30/03	Wood	30	$160	2/5/04			
1/29/04	rental fee	n/a	$100	3/8/04			
1/29/04	rental fee	n/a	$100	3/8/04			
3/15/04	Wood	30	$100	4/8/04			
3/24/04	Wood	30	$100	4/8/04			
3/24/04	Wood	30	$100	4/8/04			
3/24/04	Wood	30	$100	4/8/04			
4/5/04	Wood	30	$160	5/11/04			
4/27/04	Wood	30	$160	5/11/04			
5/28/04	rental fee	n/a	$100	6/16/04			
5/28/04	rental fee	n/a	$100	6/16/04			
TOTALS		**350**	**$2,640**				
	TOTAL YARD DEBRIS dry[1] (cubic yards)			**50**			
	TOTAL YARD DEBRIS wet[2] (cubic yards)			**30**			
		Tons per cubic yard (dry)		0.107	(estimate - need to get real weight from LFP)		
		Tons per cubic yard (wet)		0.217 [3]			
		TOTAL YARD DEBRIS (tons)		**11.85**			
		TOTAL WOOD (cubic yards)		270			
		Tons per cubic yard		0.101 [4]			
		TOTAL WOOD (tons)		**27.27**			
	TOTAL WOOD AND YARD DEBRIS (tons)			**39.12**			

Information is from Lane Forest Products receipts that can be obtained from the Facilites Management & Planning office

1 Dry = June through September

2 Wet = October through May

3 Lane Forest Products weighed one of our full 30 yard yard debris boxes on 11/9/04. It weighed 13,000 pounds minus weight of the container. This is a wet weight because the debris sat out and got rained on prior to being picked up and weighed. We will get a dry yard debris weight next summer.

4 Lane Forest Products weighed one of our full 30 yard wood debris boxes on 10/26/04. It weighed 6060 pounds minus weight of the container.

Container Recycling Weight Calculations

Glass and Plastic Recycling Weight Calculation	
Recycling Containers picked up from July 2003 thru January 2004[1]	90
Average number of containers picked up per month	12.86
Estimated number of containers picked up February thru June 2004[2]	64.29
Estimated number of containers picked up in 2003/2004	154
Container size (gallons)	90
Estimated # of gallons picked up in 2003/2004	13885.71
Estimated # of cubic yards picked up in 2003/2004	68.67
% of containers that are full of glass[3]	28.57
% of containers that are full of plastic[3]	71.43
Volume of glass recycled (cubic yards)	19.62
Volume of plastic recycled (cubic yards)	49.05
Estimated pounds/cubic yard for recycled glass containers[4]	600
Estimated pounds/cubic yard for recycled plastic containers[4]	36
Weight of glass containers (tons)	5.89
Weight of plastic containers (tons)	0.88

Deposit Can & Bottle Recycling Weight Calculation	
Revenue from container deposits	843.53
Deposit containers recycled	16870.6

1 Information from garbage hauler invoices that are filed in Building 7, Room 203B, Jennifer Hayward's office, File: "Garbage"; file folder: "Garbage POs & Costs"

2 # of containers picked up between February and July must be estimated because Royal stopped charging us for Recycling pick and and quit putting recycling amounts on invoices

3 Ratio of glass containers to plastic containers (2:5) provided by staff member, Diane Burns, who collects and sorts cans & bottles for recycling

4 Campus Refuse Profile of the Campus and University Recycling Council (CURC).

Food Recycling Weight Calculation

Item	Weight (lbs.)
Preconsumer food scraps separated by the kitchen for composting[1]	2380
Kitchen grease recycling[2]	6750
Food donated to non-profit food bank[3]	17800
TOTAL WEIGHT (lbs.)	26930
TOTAL WEIGHT (tons)	13.465

1 Information from Earth Tub Tracking Spreadsheets that are filed in Building 7, Room 203B, Jennifer Hayward's office, File: "Composting"; file folder: "Earth Tub Tracking"

2 Kitchen grease is recycled by EC Restaurant Services (541-995-6025). They have a contract to pick up our medium sized container once per month. EC said that a full medium container weighs 1500 lbs. EC recycles the grease by marketing it to Korea and China where it is made into biodiesel and soaps. Jennifer Hayward spoke to Greg Winslow (Foodservices Coordinator) and Beverly Gregory (Kitchen Coordinator) on 9/3/04. Bev indicated that she doesn't think that they really empty the container once per month and that it is not full when they do come. Greg said that he would ask Rhonda Johnson (Administrative Specialist) if she had records that indicate how often they pick up. He will get back to me. For now, this document will estimate that the container is picked up 9 times per year and that it is 1/2 full for each pick up.

3 The college donates prepared, but not sold, food to the Eugene Mission. Dianne Burns (Recycling & Surplus Property) spoke with the Mission staff and they indicated that they pick up approximately 80 buckets of food per week Fall through Spring and 30 buckets of food per week suring Summer. This calculation estimates 5 lbs./bucket. Need to talk to Foodserives & Mission to get more exact numbers of buckets and weights.

Universal Waste Recycling Weight Calculations

Lighting Waste Recycling		
Date	**Material[1]**	
8/18/03	4' lamps (2228')	
8/18/03	U bent compact (4)	
8/18/03	HID lamps (8)	
10/9/03	4' lamps (1004')	
10/9/03	8' lamps (88')	
10/9/03	HID lamps (4)	
10/9/03	U bent compact (4)	
11/5/03	non-PCB Ballasts	
3/31/04	4' lamps (1840')	
3/31/04	U bent compact (10)	
3/31/04	compact (5)	
Recycled lighting waste weight calculation		
	Fluorescent lamps	
	weight of lamps (lbs.) per foot	0.137820513
	feet of lamps recycled	5160
	total weight of lamps (lbs.)	711.1538462
	U bent compact lamps	
	weight (lbs.) per U bent compact	0.388888889
	# of U bent compacts recycled	18
	total weight of U bent compacts (lbs.)	7
	HID lamps	
	weight (lbs.) per HID lamp	0.208333333
	# of HID lamps recycled	12
	total weight of HID lamps (lbs.)	2.5
	Compact fluorescents	
	weight (lbs.) per compact	0.3
	# of compacts recycled	5
	total weight of compacts (lbs.)	1.5
	Ballasts	
	total weight of ballasts (lbs.)[1]	1400
	TOTAL WEIGHT OF LIGHTING WASTE RECYCLED (tons)	1.061076923

Battery Recycling				
Date	**Material**	**Weight (lbs.)**		
9/9/03	Lead acid battery from Welding forklift[2]	1142		
2003/2004	16 Lead acid batteries from FMP motorpool[3 & 5]	515		
2003/2004	51 Lead acid batteries from Auto Lab[4 & 5]	2626.5		
2003/2004	Other batteries recycled on campus	118		
	TOTAL BATTERY WEIGHT	2.20075	tons	

Motor Oil Recycling				
Date	**Material[6]**	**Volume (gal)**		
9/3/03	Used oil from B12	15	(thermofluids)	
2/27/04	Used oil from B10	775	(thermofluids)	
	TOTAL	790		
Recycled motor oil weight calculation				
	Density of used motor oil	0.828	g/ml	
	Density of used motor oil	6.909126984	lbs/gal	
	total weight of used motor oil recycled	**2.73**	**tons**	

Antifreeze Recycling				
Date	**Material[6]**	**Volume (gal)**		
2/23/04	Used antifreeze	65	(thermofluids)	
Recycled antifreeze weight calculation				
	Density of antifreeze	9	lbs/gal	
	total weight of used antifreeze recycled	**0.2925**	**tons**	

1 Information from lamp recycler, Environmental Protection Services, invoices that are filed in Building 7, Room 203B, Jennifer Hayward's office, File: "Universal Waste"; file folder: "Universal Waste - Lighting Waste"

2 Information from lamp recycler, Environmental Protection Services, invoices that are filed in Building 7, Room 203B, Jennifer Hayward's office, File: "Hazardous Waste Disposal"; file folder: "Manifests 2003"

3 Estimated by motorpool mechanic Bob Dyck

4 Information from Ed Glazier, Advanced Technology Instructional Specialist. E-mail from Ed is filed in Building 7, Room 203B, Jennifer Hayward's office, File: "Hazardous Materials - Fire Marshal Report 2004"

5 Weighed two lead acid batteries. Average weight per battery was 51.5 lbs.

6 Information from summary of services provided to LCC from vendor. See data binder.

Surplus Property Weight Calculation

Items donated to external qualifying state-supported or tax-exempt entities for reuse	**Weight (lbs.)**
54 Monitors sent to St.Vincent DePaul for rejuvenation and reuse	1620
45 CPUs to St.Vincent DePaul for rejuvenation and reuse (each CPU= 25lbs)	1125
75 CPU's to St. Vincent DePaul for rejuvenation and reuse	1875
75 used student desks to Springfield Schools, Springfield, OR	2100
25 stackable chairs to Springfield Schools, Springfield, OR	275
1 Kodak Slide Projector and 2 trays to Bring Recycling, Eugene, OR	15
2 IBM Selectric typewriters to Bohemia Elementary School, Cottage Grove, OR	80
1 IBM Selectric typewriter to Siuslaw High School, Florence, OR	40
1 Charles Merriam Company Floor Barometer to Eugene 4J Schools	75
8 inoperable IBM Selectric Typewriters, Cottage Theatre, Cottage Grove, OR	240
4 typewriter carts , Cottage Theatre, Cottage Grove, OR	120
8 rolling metal office chairs, Cottage Theatre, Cottage Grove, OR	200
1 Vinyl office chair, Cottage Theatre, Cottage Grove, OR	15
11 CPUs LEAD Program, Eugene, OR	275
4 monitors, LEAD Program, Eugene, OR	120
4 study carrels, Toledo High School, Lincoln City,OR	400
Dertex Soniclean Generator	200
Donation to St. Vinvcent DePaul 04/25/04 (17 boxes of glassware, 4 boxes of gym clothes, 1 old faux-leather couch)	445
Donation to St. Vinvcent DePaul 06/25/04 (1 standing frame, 2 boxes gym clothes, 5 stacking chairs, 2 office chairs)	450
Donation to St. Vincent DePaul 12/18/03 (50 computer keyboards)	115
Items sold for reuse	
Sale of RTS Tires mounted on Ford 8-hole wheels	240
Sale of 195/75R14 studded tires mounted on Dodge wheels	280
Brasher's NW Public Auction 11/15/03	
Brasher's NW Public Auction 12/18/03	
Brasher's NW Public Auto Auction 01/21/04	
Brasher's NW Public Auto Auction 2/14/03	
Brasher's NW Public Auto Auction 03/13/04	
Brasher's NW Public Auto Auction 05/08/04	39980[1]
Recycled surplus items	
Blodgett Mark V commerical oven (recycled at St. Vincent de Paul)	590
Blodgett commerical oven (old model) (recycled at St. Vincent de Paul)	800
commercial range/oven E tag 36309 (recycled at St. Vincent de Paul)	700
167 monitors (recycled through Total Reclaim - 9/8/03; approx weight/monitor = 30 lbs.)	5010
6 19" TVs (recycled through Total Reclaim - 9/8/03; approx weight/TV = 40 lbs.)	240
7 25" TVs (recycled through Total Reclaim - 9/8/03; approx weight/TV = 50 lbs.)	350
4 disposable pressurized metal cylinders (recycled through Total Reclaim - 9/8/03)	36.5
5 pallets of electronics (recycled through Total Reclaim - 12/18/03)	1515
45 monitors (recycled through Total Reclaim - 12/18/03; approx weight/monitor = 30 lbs.)	1350
TOTAL WEIGHT (lbs.)	60876.5
TOTAL WEIGHT (tons)	30.43825

1 See list of items sent to Brashers NW Public Auto Auction in table below

Vehicles sold at Brasher's NW Public Auto Auction

Vehicle	Weight (lbs.)
74 Chevrolet Custom 30	8200
80 Dodge Custom 150	7800
88 Dodge Caravan	4700
85 Dodge Ram 150	5200
75 Ford 3000 Tractor	3000
89 Ford Aerostar	4880
81 Chevrolet Blazer	5200
62 Army trailer	1000
TOTAL WEIGHT (lbs.)	39980

Transportation infrastructure and incentives

Transportation Year Reported: 2003-04

12. Transportation infrastructure and incentives

INTENT: Create transportation opportunities that reduce diffuse environmental impacts, as well as spillover costs to the campus surroundings (such as traffic and parking congestion).

INDICATOR DATA:

(1) Strategies

Describe the strategies that Lane has implemented to reduce transportation impacts. (Refer to attached Good Company benchmark for examples of strategies.)

Reduced-price bus pass for students.

(2) Planning

Describe Lane's planning efforts related to reducing impacts associated with transportation

Preliminary team gathered baseline data.
Long-range planning team to be chartered by Board.
Future vehicle purchases to be hybrid; maintenance vehicles to be all-electric.

(3) Data

List data that Lane has gathered that will help in transportation planning.

# of parking spaces per credit student & staff: .322 per individual (not FTE)

% of parking spaces used (8 am to 3 pm): 90%

# of secure bike storage locations per student & staff FTE: _____

% of bike storage location used (8 am to 3 pm): _____

Bus ridership: 4207 per year

BENCHMARK:

(1) *Strategies:* The college is implementing appropriate strategies to reduce transportation impacts.
(2) *Planning*: The college plans and implements strategies to reduce its transportation-related impact on the environment and its surrounding community.
(3) *Data*: The college gathers relevant data on: campus infrastructure, such as car and bike parking spaces; use of various transportation modes such as car, bike, bus and other public transportation, and pedestrian travel; and the spatial distribution of campus users.

	ANALYSIS: Has Lane met the benchmark level? **No.** Why or why not? One strategy—reduced-price bus passes—has been implemented to date. Additional strategies are needed. Recommended strategies for improving performance in this area? *Offer alternative modes*: Partner with City and Metro to develop safe bicycle route. Partner with LTD to offer free-of-charge bus passes (as U of O does). Implement true-cost pricing for car parking. Implement carpooling and business-trip consolidation incentives. Recommended strategies for decreasing transportation-related impacts? *Reduce number of trips required*: Increase number of courses offered through distance learning. Implement four-day work weeks or work-from-home options where possible. *Reduce impact*: Increase tree canopy in parking areas to reduce/mitigate pollution. Convert campus fleet to lower-emission, non-petroleum vehicles. Convert maintenance carts to zero-emission vehicles.

Report created by: Margaret Robertson

Date: 8-26-04

PLEASE LIMIT REPORT TO TWO PAGES
Supporting data and calculations should be attached

Sustainability / Transportation Sub-group
Preliminary Baseline Data

General	Data	Year	Source
Student population--credit, per term, academic year	∪10,500	2002	IRAP
Student population--credit, per year	27,069	2003-04	Susan Tatar
Student population--noncredit	∪9000	2002	IRAP
Students paying $5 fee, per year, all campuses	11,955	2003-04	Susan Tatar
Staff population--fulltime	1100	2003	parking committee
Staff population--part-time, hourly	800	2003	parking committee
Visitors and vendors/day	100	2003	parking committee
Student/staff location (trip origination)	Map?	?	IRAP
Future student/staff population			
Trips/day, total			
Trips/day/person			
Miles/day, total			
Miles/day/person			
Type of trip: percentage in each mode			
Car: percentage single-passenger trips			
Current revenue	Fee: $15/student--$150,000/year	2004	(F04: $16, W05: $17)

Automobile	Data	Year	Source
Number of parking spaces--accessible	65	2003	parking committee
Number of parking spaces--reserved	115	2003	parking committee
Number of parking spaces--marked, standard width	3341	2003	parking committee
x stall turnover (2.5-3/day) = number of cars/day	8250-9900	2003	parking committee
Percentage of parking stalls occupied, 8am - 3pm	90%	2003	parking committee
Number of spaces/person--students and staff	0.322	2003-04	calculated
Number of cars/day	9800	2002	Lane County car count
Parking lot--maintenance/year	$110,000	FY04	transportation fee committee
--improvements/year	$47,000	FY04	transportation fee committee
Parking lot--maintenance/year	$75,000	FY05	transportation fee committee
--improvements/year	$75,000	FY05	transportation fee committee
True cost of driving/parking			
Existing carpooling program?	none (informal through ASLCC)		
Coordination of trips on college business?	none		

Bicycle	Data	Year	Source
Number of bike racks			
Location, type			
Percentage in use/empty			
Location of routes			
Safety of routes			

Mass transit	Data	Year	Source
Existing subsidy program	Group Pass Program	1998-2004	transportation fee committee
Number of routes/day available, by location			
Number of bus pass stickers picked up per year	4207 photo IDs	2003-04	Susan Tatar
Number of bus passes purchased/term	2300	F2002	parking committee
Ridership/day	3000	2003	LTD
What does LTD offer?			
Cost of operating bus pass program	$11,000: photo ID expenses	2004	transportation fee committee
Cost of administering bus pass program	none to General Fund	2004	transportation fee committee

College vehicles	Data	Year	Source
Number, type of low-emission vehicles			
Plan for future vehicle selection			
Maintenance			
Oil recycling			
Tune-up schedules			
Emission system maintenance schedules			

Qualitative data	Data	Year	Source
Convenience survey: bus routes			
Reasons for not using public transportation	biggest issue: convenience, time	2003	informal survey, parking com.
What would motivate you?			
Awareness? (of programs available, of environmental impact)			

Strategic planning	Data	Year	Source
What strategies have been investigated? Have data?			
Bus pass program, in use	extensive work	1998-2004	transportation fee committee
Paid parking program, not implemented	extensive work	2001-2003	parking committee
Parking structure construction	high cost	2002?	Facilities Planning
Park (e.g., at Fairgrounds), shuttle service to college	informal; no written records	2003	parking committee
History of strategies implemented here			
Precedents from other institutions	PCC, Chemeketa, UO, OSU, Austin CC		parking committee
Student/staff growth forecast			
On-campus housing plan?			
Who coordinates public transit/carpooling?			
Carpooling program planned?			
Business trip coordination program planned?			
Grant funding: research			
Grant funding: implementation			
Specifics of Board directive re: transportation			

Landscape Maintenance

Landscape maintenance

INTENT:
Minimize the use of pesticides, fertilizers, and water in the maintenance of the built campus landscape.

Minimize the burden on stormwater.

Reduce the chemical exposure to campus users.

Allow the campus to function as a habitat.

INDICATOR DATA:

(1) Chemical use

List the pesticides and fertilizers with amounts used during the reporting year.

Pesticide	Amount
Round-up	147.6 oz
Hornet spray	1.5 gal
Snail bait	~2 lbs.

Fertilizer	Amount (lbs.)

No fertilizer is used on grounds, but Miracle Grow is used in the nursery. Mulching and compost eliminate the need for fertilizer on the grounds.

Strategies used to eliminate or reduce use of chemicals in landscaping are:

- Plant diversity
- Use of native plants
- Beds are designed to provide at least 80% canopy when mature to minimize weeds
- 99% of weeding is done by hand.
- 0.75% of weeding is done by burning. This is done in cracks & expansion joints in sidewalks and around building foundations where mechanical weeding is not possible.
- Round-up is used for the remaining 0.25%. Round-up is used on the tennis court and in gravel areas where burning is not allowed and mechanical weeding is not possible.

(2) Water use for irrigation

Is water use for irrigation tracked separately from the total water supply? No.

How much water was used for irrigation during the reporting year? There is no way to estimate water used for irrigation on main campus at this point.

Describe any strategies used to save water in landscape maintenance.

- Only low maintenance &/or native plants are planted. The only exception to the use of low maintenance &/or native plants are a few small color spots around campus. All new plantings (except lawns) are intended to require no irrigation after 5 years.
- Lawns are allowed to go almost dormant during the summer and are watered very minimally. Two weeks prior to fall term, landscape maintenance begins watering lawns again so that they can be green for the school year.

NOTE: Grounds has not moved away from spray irrigation to the more efficient drip irrigation because staff can't tell if drip irrigation is not working until plants die. In addition, plants establish more quickly with spray irrigation. Grounds Lead, Frank Drengacz, explains that spray irrigation is meant to save water because more area around the plant is watered and the roots can grow more quickly and naturally. This allows grounds staff to stop watering sooner because plants establish sooner.

(3) Plant selection

Describe the use of low maintenance plants that fit with the local eco-system. How much of the campus is landscaped with these types of plants?

Only low maintenance &/or native plants are planted. The only exception to the use of low maintenance &/or native plants are a few small color spots around campus.

All new lawns are native grasses.

(4) Stormwater

Describe what the college has done to reduce impacts from stormwater quantity and quality.

The college has not yet worked on reducing impacts from stormwater quantity and quality.

BENCHMARK:

(1) *Chemical use:* Total use well below conventional norms; implementation of techniques (such as Integrated Pest Management (IPM)) to minimize or eliminate the use of toxic and persistent chemicals.

(2) *Water use for irrigation*: Ensure the implementation of water-saving devices and techniques throughout campus, especially where easiest and most cost-effective. Track water use for irrigation separately.

(3) *Plant selection*: Select plants with low maintenance requirements, and that otherwise fit with the local ecosystem, i.e., plants that are non-invasive and that provide habitat for native species.

(4) *Stormwater*: Policies ensure that development minimizes the use of impervious surface such as parking spaces and hardscaping in order to reduce impacts on stormwater quantity and quality.

ANALYSIS:

Has Lane met the benchmark level? **No.**

Why or why not? The college meets or exceeds the benchmark in several areas, however, not all areas are at benchmark level.

Lane meets or exceeds the benchmark in the following areas:

- *Chemical use* – well below conventional norms.
- *Plant selection* – Plants with low maintenance requirements are selected.

Lane is not at the benchmark levels in these areas:

- *Stormwater* – no effort has been made to reduce the impact of stormwater quality or quantity.
- *Water use for irrigation* – The college has implemented techniques for reducing water used for irrigation. These techniques include allowing lawns to go almost dormant in the summer and planting low maintenance and native plants that do not need to be watered after 5 years. However, water saving technology like a central irrigation controller and drip irrigation are not used.

Recommended strategies for improving performance in this area?

- Purchase the Maxicom Central Irrigation Controller. The vendor of this controller estimates that installation will decrease campus water use by 33%.
- Irrigate with treated wastewater once sewage treatment is upgraded and meets tertiary standards.
- Begin incorporating stormwater concerns into the planning process. All new projects should minimize addition of impervious surface. When additional impervious surface must be installed, consideration should be given to naturally treating stormwater to remove pollutants prior to release to Russell Creek.

Report created by: Barbara Dumbleton, Jennifer Hayward, Joe Russin, Kate Skelton

Date: 10/6/04