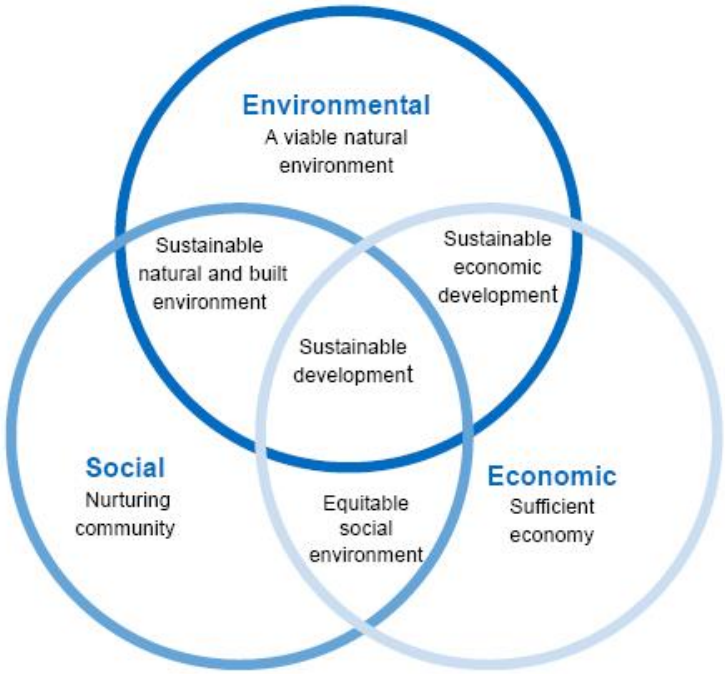
How Sustainable is EdCC?



Sustainability Assessment for Edmonds Community College

Phase 1

Timothy C. Hohn, Horticulture Department,
Aaaaaaa

Made possible with a generous grant from the Edmonds Community College Foundation

EdCC Sustainability Assessment
Conducted Fall 2007 & Winter 2008

Table of Contents

Introduction....3
Assessment Results....4
Computer Hardware Purchasing and Disposal....4
Benchmarks:....5
Recommendations:....6
Curriculum on Sustainable Practice and Livelihood....6
Benchmarks:....7
Recommendations:....7
Custodial and Maintenance Chemical Use....8
Benchmarks:....8
Recommendations: none needed as of this assessment.....10
Energy Use:Greenhouse Gas Emissions and Carbon Footprint.10
Benchmarks:....11
Recommendations:....12
Landscape Management....12
Benchmarks:....13
Recommendations:....14
Paper Use and Purchasing....15
Benchmarks:....15
Recommendations:....17
Recycling Rate, Infrastructure and Systems....17
Benchmarks:....18
Recommendations:....19
Transportation Infrastructure and Incentives....19
Benchmarks:....20
Recommendations:....21
Waste: Reduction, Reuse and Disposal....22
Benchmarks:....22
Recommendations:....23
Next Steps....24
Appendix A....24

Introduction

Universities and colleges have broad missions and activities, as well as broad impacts and responsibilities. Every institution faces the challenge of meeting its core mission while participating responsibly in its community and in society as a whole. This challenge is an opportunity for leadership. This report "an assessment of Edmonds Community College sustainable practice – is a product of a growing commitment by the to sustainability. This project was made possible by a generous grant from the Edmonds Community College Foundation.

This report is a snapshot of the College's progress toward sustainability. The findings showcase areas of both high performance and potential improvement. The following sections of this report will provide information on the current status of several select indicators of sustainability taken from the Good Company's Sustainability Pathways Toolkit for assessing college and university sustainability. There will also be recommendations of where the College can reinforce its strengths and shore up key shortcomings. Some shortcomings demand action. Others, however, reflect the constraints of our time: sustainability is a systemic problem that no single individual or institution can achieve alone without progress by the society as a whole. Indeed, we do not yet know what a "sustainable society" will have to look like. Nonetheless, individuals and institutions that understand the urgency must take the first steps.

One of the principal benefits of using the Good Company's Sustainability Toolkit is the benchmarking it contains for the various areas of assessment. These benchmarks are based on the many assessments that the Good Company has performed for colleges and universities across the country giving them useful validity.

The assessment team members were Timothy Hohn, Instructor, Horticulture Department, Tia Savedo and Tasha Schwartz, both Horticulture students. The assessment data gathering occurred during Fall Quarter 2007 and Winter Quarter 2008 with the cooperation of many EdCC faculty and staff. The assessment team takes responsibility for all errors in understanding the data provided to them, and all errors in

transcription or calculation. They do not, however, certify the authenticity of the data provided in its raw form. The team asks all readers to please let Timothy Hohn know of any necessary corrections or changes.

The areas included in this assessment were chosen based on the fact that the responsible managers have been involved in the EdCC Sustainability Initiative and have participated on the EdCC Sustainability Council. In other words, the Sustainability Council decided to begin this on-going process with familiar participants. The assessment areas were:

- Curriculum
- Custodial services
- Energy use: greenhouse gas emissions and carbon footprint.
- Landscape management
- Paper use: copy center and computer labs
- Transportation
- Waste stream: general waste, recycled material, e-waste

The next section of this assessment provides the results for each of the above areas including benchmarks taken from The Good Company's Sustainability Toolkit.

Assessment Results

Computer Hardware Purchasing and Disposal

Goal: Address the life-cycle impacts of computer hardware through awareness, purchasing, inventory management and disposal.

Impact:
The manufacture and disposal of computer hardware involves large amounts of toxic chemicals; information technology hardware uses a significant share of a campus' electricity; and hardware contains numerous toxic metals (such as lead, cadmium, hexavalent chromium and mercury) that pose risks with improper disposal.

A life-cycle strategy for both purchasing and disposal can reduce a campus' immediate impact via the waste stream, lower its long-term expenses for energy use and waste disposal, and target its market pull for more sustainable purchases. As large users of such equipment, universities have special opportunities and responsibilities.

Benchmarks:

The institution has policies and processes to ensure that it:

(1) Purchases energy-efficient information technology hardware;

EdCC Performance: The College uses energy star compliant computers and monitors. In the past we have used software that would shut down a computer after a period of non use, but the cost of the software licensing was triple any monetary savings realized from curtailed energy use. At present this has been abandoned. There is a new guiding principle to replace all CRT type monitors with lower power-using LCD monitors; however, it is still prudent to leverage the initial cost of the monitor while there is still useful life and to not expedite the need to dispose of a "still functioning" monitor.

(2) Selects manufacturers that provide end-of-life assistance, including product take-back;

EdCC Performance: We use name brand, HP, Dell, Apple (not white box) systems. These companies have always had good track records in environmental issues; however, end-of-life assistance is not a consideration in the process to determine the vendor or supplier.

(3) Provides for proper disposal of campus-owned hardware and monitors recycling vendors' practices to ensure performance; and

EdCC Performance: Campus electronics that are not suitable for salvage and reuse are sent to Total Reclaim Environmental Services. This company appears to operate in a sustainable way but this has not been verified.

(4) Provides salvage and reuse options for campus users and members of the immediate community.

EdCC Performance: The campus receiving department makes surplus electronics of a recent vintage without major flaws available to campus users for reuse. Computers are also salvaged and restored for reuse by faculty member Steve Higden as part of his class CIS 163.

Recommendations:

Purchasing:

- Formally seek to purchase hardware manufactured by producers with exemplary environmental performance and transparency with regard to environmental practices. This should be investigated further.
- Purchasing policies that require Extended Producer Responsibility (EPR) (or "product stewardship") for some or all components of computer hardware.

Inventory management:

- Provide opportunities for responsible disposal of computer hardware by campus units and residents of the campus community. Investigate the recycling practices of any recycling contractors, e.g. Total Reclaim Environmental Services.
- Maintain an inventory of obsolete, dead or unused computers and other electronic equipment, and track projected stocks and flows.
- Work with state agencies to refine state government guidelines that constrain disposal of high-value purchases by property managers [for public institutions].

Curriculum on Sustainable Practice and Livelihood

Goal: provide curricular and campus-based learning to raise the literacy of students about sustainable practices in each discipline and informed choices for a sustainable livelihood. Pursue this goal by engaging existing disciplines, facilitating multidisciplinary communication and involving non-academic stakeholders with relevant expertise.

Impact:
Including sustainability in students' education reinforces this aspect of the campus' mission and activities. Interdisciplinary approaches, in particular, show the relevance of various disciplines to the bigger sustainability picture.

Benchmarks:

This benchmark has three components:

(1) It is possible to meet certain general education requirements for ATA and Certificate students by taking courses designated as relevant to sustainability.

EdCC Performance: Not at this time.

(2) The college has an Environmental Studies program or its equivalent, receiving general funding that establishes its on-going presence and independence (i.e., not simply external grant funding).

EdCC Performance: No Environmental Studies program at this time.

(3) Evidence of communication with and to students about the implications and impacts of sustainable practice in their chosen field of study and personal choices for a sustainable livelihood.

EdCC Performance: This occurs in select classes in various fields of study listed below:

- GEOG 150: Sustainable Development
- Restoration Horticulture ATA Degree
- LEAF School
- ANTH 100 & 101
- BIOL 105 (select sections)
- ENG 105 (select sections)
- SOC 130

Recommendations:

- Develop an Environmental Studies program as part of the EdCC Science Hub. Degree programs and departments of Environmental Studies can be important first steps and stepping stones to the integration of sustainability into other disciplines, as well as points of

introduction for students who live in a society that lacks informed and widely available dialogue on sustainability.

- Approval of an academic Sustainability Requirement, similar to that of cultural diversity, with a focus on bioregional, sustainable development.

Custodial and Maintenance Chemical Use

Goal: reduce exposure of employees and campus users to toxic chemicals used in campus-wide custodial and maintenance operations.

Impact:
Chemicals routinely used in cleaning often include persistent pollutants and volatile organic compounds (VOCs), including known carcinogens and endocrine-disruptors. Reducing the use of such chemicals benefits both custodial employees, the campus community and the ecosystem in general. Volatile organic compounds are also found in common paints and finishes and are a major cause of indoor air quality (IAQ) problems. Substances from paint off gassing, such as ozone and formaldehyde, are toxic to everyone and potentially disabling to individuals with chemical sensitivity.

Benchmarks:

A monitoring and management process exists to assess the needs for, and impacts of each chemical-intensive custodial and maintenance product. An effective process consists of the following elements:

- A process to screen new chemicals selected,
- A purchasing screen/list,
- Training and education (beyond MSDS), and
- An inventory of all custodial and maintenance chemicals.

This process must consider toxicity, downstream impacts, and worker safety, as well as the cost for all indoor custodial and maintenance tasks that involve chemical use, including cleaning and upkeep, painting and finishing, and pest control.

EdCC Performance:

- There is a complete inventory of all custodial and maintenance chemicals in MLT 109 the custodial office, In bay 4of the warehouse, In NCD office has the master MSDS book for the department and must keep copies of all chemicals that are still in use and no longer used for at least 5 years.

- Every custodial closet on campus has a common use MSDS book in it.

- All new employees, this includes full time classified, part time and student hires, watch a film on "Hazard Communication Program" (MSDS) and after the film they are given a written test. This testing is done on a yearly basis for all department employees.

- We also, along with the MSDS film, show a film on "Bloodborne Pathogens." Afterwards, employees are given a written test. This testing is done on a yearly basis for all department employees.

- The custodial department has begun purchasing "Green Seal," EPA approved products. If those are not available, products must receive a #1 health rating.

- Custodial supply companies are promoting the "Green Seal" products that they have. We do not have a list of chemicals that are potentially hazardous to both the user and or environment.

- We currently use the following screening and/or listing criteria in purchasing cleaning products: "Green Seal" and EPA approved with a #1 health rating.

- The vacuum cleaners that we use all have hospital grade HEPA filters; the vacuum bags are in a sealed hard cased unit to prevent dust escaping. Carpet extractors are now using less water so carpet-drying time is cut down. We are testing Micro fiber dusters, these are stated to capture dust particles and not release them back into the air.

- Custodial services is promoting floor surfaces in new and remodeled buildings that are more sustainable from a maintenance standpoint, e.g. sealed concrete. These

floors eliminate the need to wax and strip floors of other types, and arduous and toxic process.

Recommendations: none needed as of this assessment.

Energy Use:Greenhouse Gas Emissions and Carbon Footprint

Goals:

- Encourage energy efficiency. Facilitate action by ensuring that the institution collects and reports information on its own energy use practices.

- Obtain a full accounting of campus greenhouse gas emissions.

Impact:
The use of energy is one of our primary environmental impacts, representing a major share of air pollution, smog, acid rain, and greenhouse gas (GHG) emissions. This energy also has major negative impacts in the mining, processing and transportation of fossil fuels, the disposal of nuclear waste, and ecosystem disruption from many hydroelectric dams.

A 2001 study by the Union of Concerned Scientists demonstrates that the
United States could meet all growth in energy needs through the year 2020 exclusively through efficiency measures. Combined with a partial transition to renewable sources, this would result in billions of dollars in savings, as well as dramatically lower environmental and health impacts.

Campuses need to track their energy use practices in order to make informed decisions. Increased knowledge of energy use will facilitate informed efficiency investment in renovation and construction, as well as targeting high-use campus units.

Finally, climate change is broadly considered by scientists to be one of the most pressing environmental challenges of

our time. An institution's GHG emissions represent a concrete outcome around which to set goals, educate, and raise awareness. Furthermore, GHGs are a proxy for numerous aspects of an institution's environmental performance.

Benchmarks:

This benchmark has seven components:
(1) Use: Total energy use for heating, cooling, and electricity does not exceed 80-150 MMBtu per Scaled Campus User (SCU) per year. Refer to the Good Company Toolkit for conversion information.
(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.
(4) Conduct a GHG inventory for all campus operations that includes all significant emissions of carbon dioxide (CO2), methane (CH4) and nitrous oxide (N2O), expressed as CO2 equivalents (CO2e).
(5) Clarify "boundary issues" for the inventory i.e., clearly articulate which aspects of campus life should fall inside and outside of the inventory, and which are included given available data. At a minimum, include campus utilities use. Where feasible, include impacts from commuting, institutional and student travel (including fleets), and the waste stream.
(6) Document and quantify any campus GHG mitigation efforts, such as offsets or green power purchasing intended to reduce net GHG emissions.
Estimate the cost to achieve Kyoto compliance and/or "climate-neutral" performance (i.e., zero net GHG emissions) respectively, based on available mitigation strategies.
(7) Establish 1990 baseline if data are available. (The Kyoto Protocol, the major international treaty aimed at addressing climate change, uses 1990 as the base year for GHG emissions comparisons.)

EdCC Performance: the College has entered into an agreement with the Washington State Department of General Administration, Division of Facilities, Engineering and Architectural Services, and the Trane

Company to conduct an energy audit on campus. This audit may lead to alterations in energy supply, energy use, and the HVAC equipment used on campus to achieve greater energy efficiency. Some of the contract elements:

- Monitor actual energy use and expense.
- Monitor facility operations including equipment efficiency and operator training.

Recommendations:

There are many resources that assist institutions in improving energy efficiency, including public-sector agencies and programs such as the US EPA, Energy Star, and state environmental agencies. Public utilities also provide energy conservation programs as well as many private energy companies and consulting firms.

There are various ways for a campus to ensure that it collects, processes and disseminates information about energy use effectively in order to maximize awareness and cost savings:

- Work with local utilities to ensure consistent, high-quality information and to take advantage of tax incentives.
- Communicate usage anomalies with campus units (e.g., report usage spikes to departments or building managers).
- Communicate with and educate campus users and residents (e.g., posting of usage numbers in buildings).
- Energy management strategies for computer hardware, including network- and PC-based software, can help monitor, manage and reduce energy used by computers.
- Estimates of energy use by activity (where disaggregated data exist).

Landscape Management

Goal: Minimize the use of pesticides, synthetic fertilizers, petroleum and petroleum-based products, and water.

Impacts:

If not managed sustainably, the campus landscape may be a large resource consumer including water, petroleum, and petrochemicals – some of which may be quite toxic.

Benchmarks:

This benchmark has 5 components that demonstrate significant and sustainable improvements over conventional pesticide-, herbicide-, petroleum, and water-intensive procedures in the management of landscaping:

(1) Chemical use: The institution has a sustainable pest management plan to guide these activities with a minimum of chemical dependence. The institution also uses organic products for fertility management to minimize surface and ground water contamination as well as the embedded pollution and petroleum dependency associated with fertilizer manufacture.

EdCC Performance: There is a College IPM program description although it does not contain specific information on identifying key pests, monitoring protocols and sampling procedures, action guidelines, or specific management interventions. Biorational pesticides are used along with two synthetic herbicides: Ronstar and Roundup. Organic fertilizer mulches are used to topdress planting beds. Synthetic fertilizers are used for lawn areas (20-5-0) and planting (15-22-15).

(2) Petroleum dependency: Minimize dependence on petroleum used, and the associated air pollution, by internal combustion engines through the use of manual or electric-powered operations and 4-cycle only internal combustion powered equipment.

EdCC Performance: Excavation, hauling, people movers, and most mowing equipment is diesel or 4 cycle gas powered; smaller equipment (hand mowers, trimmers) is primarily gas powered with a mix of 2 and 4 cycle engines. No operational hours are recorded for this equipment.

(3) 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.

EdCC Performance: The campus has a mix of low volume and standard automated irrigation systems in addition to a mulching program to conserve ground water and reduce competitive weed growth. Water use for irrigation is not measured.

(4) 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.

EdCC Performance: The campus is landscaped with a large diversity of plants to satisfy the needs of academic programs. Many of these plants require careful placement and soil preparation to minimize their management requirements, including irrigation. Included in this mix are some native plants that are conservative if correctly used.

(5) Storm water policies ensure that development minimizes the use of impervious surface such as parking spaces and hardscaping in order to reduce impacts on storm water quantity and quality.

EdCC Performance: There is a great deal of impervious surface on campus and little mitigation or capture of storm water runoff.

Recommendations:

- Complete the IPM program to include the identification of key pests, monitoring protocols, action thresholds, and a hierarchy of intervention strategies centered on biorational management tools.
- Switch to organic sources of plant nutrients to minimize.
- Purchase low or zero carbon power tools through a program of managed attrition.
- Amend the soil more thoroughly and mulch consistently to mitigate the need for irrigation. Use low volume irrigation where appropriate and manage / maintain those systems for optimum performance.

- Install rainwater catchment systems for use with irrigation. Develop bioswale features to more effectively channel storm water runoff for retention on site and to augment landscape irrigation.

Paper Use and Purchasing

Goal: Minimize the impacts of paper use by improving the environmental characteristics of purchased paper and by lowering total paper use.

Impact:
Paper products are a significant part of the waste stream of campuses, and 38% of the nation's waste stream. A significant increase in the post- consumer recycled content of paper saves timber resources, reduces energy and water use, and shrinks the final waste stream going to landfills. Paper and pulp production using chlorine is also a major source of dioxin, a highly carcinogenic substance. Finally, paper use is highly visible, and small changes in its form and content can raise awareness throughout the institution. Widespread experiences show a significant drop in printing when students must pay a cost per page – one case study showed an immediate drop of almost 50%.

Benchmarks:

This benchmark has three parts:

(1) Weighted average of 50% post-consumer recycled content (PCRC): Large- scale paper purchases (such as for printers and copiers) contain a weighted average of at least 50% PCRC.

EdCC Performance: 20% of the total paper used in the Print and Mail Center is post consumer:

- White paper: no post consumer recycled content
- Colored paper: 30% post consumer recycled content
- The post-consumer recycled content of the paper used in the computer labs is unknown.

(2) Campus paper purchasing guidelines includes the following:

- Use of post-consumer recycled-content and totally chlorine-free (TCF) or process chlorine-free (PCF) paper wherever technically and financially feasible.
- Specification of recycled-content materials as a criterion for outsourced purchases, such as campus publications or programs for athletic events.

EdCC Performance: Not sure what percent of the total paper used in the Print and Mail Center is totally chlorine-free (TCF), process (PCF) or elementally (ECF) chlorine free. It is not known if any of the paper used in the Computer Labs is TCF, PCF, or ECF. Currently there are no specifications for the recycled or chlorine content of paper used in-house for duplicating and printing or out-sourced jobs for use on campus. Paper is ordered through purchasing and bid at what ever the lowest cost is. All of our colored paper is 30% recycled, but the white paper is not. It is quite a bit more expensive: $3.50 a ream vs. $2.20 for virgin paper.

(3) Incentives and information: Campus printing facilities in computer labs charge students a per-page fee for printing that communicates the existence of financial and ecological costs to users. Campus employees are encouraged to minimize use of paper.

EdCC Performance: The staff of the Print and Mail Center are always trying to discourage waste, proofs are run before printing, and all mistakes are made into scratch pads. Since we proofread before printing, we have fewer mistakes than when copies are made on department copy machines. There is no print limit for staff when ordered from the copy center, but walk up copiers that staff use in their departments have a limit of 15 copies. It is believed that many staff members exceed the 15-copy limit on the copy machine. In addition the walk up copiers are not as efficient as our printer. It is estimated that each copy made on staff copy machines is about 5 cents, and half the cost if printed by the copy center. Unfortunately the staff does not utilize the print center enough; we would encourage staff to use the center more.

In the computer labs, all students have a print limit of 500 pages per quarter. Unfortunately if they hit their limit we still have to give them more pages. We do first talk with each student who requests more paper. We show

them what 500 pages looks like, give them tips on printing less, and offer them a very small amount of paper to get them through the rest of the quarter. Students can print whatever they want whether or not it is school-related. What they choose to do with the paper after they print it is up to them. The recycle bins next to each printer seem to get full quickly which makes me wonder how much unnecessary printing is going on.

Volume of paper usage:

Print & Mail Center

White paper usage 1 pallet/week: 40 cases, 5,000 sheets/case

Color paper; Cardstock, Etc.: 10-15 cases/week

Computer Labs:

04-05 year	2,030,573
05-06 year	1,409,366
06-07 year	1,263,683

Recommendations:

Please refer to the follow-up report from the Copy and Mail Center located in Appendix A. Central purchasing can both purchase post-consumer recycled-content and TCF or PCF paper and encourage other decentralized campus units to make the same purchasing decisions (especially where inexpensive alternatives are widely available, such as bathroom tissue). By also specifying 50% post consumer fiber for outsourced printing, the College can encourage markets to provide recycled paper products. Since 1999, the Federal Government's standard has been 30%, a level considered achievable without undue financial or logistical strain. A campus can encourage efficient use with simple steps to communicate the true costs of paper use to the end user. For students, this can be accomplished with a pre-paid card-based or centralized network billing technologies that pass on a per-page fee to the user. To discourage one-sided printing, a reduced charge for double-sided printing should be incorporated into the billing system. For staff, systems can be put in place to encourage double-sided printing or the use of electronic documents.

Recycling Rate, Infrastructure and Systems

Goal: Provide the physical and organizational infrastructure to make recycling convenient for campus users. Provide a concrete benchmark for campus recycling and waste management efforts.

Impact:
Convenience is the determining factor in promoting user participation in recycling programs. Effective coordination and information dissemination are the key factors in the success of materials exchange programs. The commonly recyclable items listed above account for about 60% of the municipal waste stream, while compostable material such as food and yard clippings comprise another 20%. The United States currently recycles less than 30% of the municipal solid waste stream. Meeting the standard above would reduce negative impacts on air and water quality, lengthen life of existing landfills and save hundreds of millions of dollars in disposal and infrastructure costs. It would also provide additional feedstock to recycling industries.

Benchmarks:

This benchmark has four components:

(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).

EdCC Performance: 70%

(2) Recycling infrastructure: Locations that need recycling infrastructure:

- All campus buildings
- Computer labs with printing facilities
- Dormitories and residence halls
- Outdoor areas of high use, especially thoroughfares
- All other major campus buildings

EdCC Performance: Warehouse bay 4 & bay 10, north of the Gym, Brier Hall, Triton Union Building, all facility offices in the hallways of the buildings, entrances of buildings, outside the classrooms and computer labs in the hallway.

(3) Materials collected for recycling: Collection bins for

all locally available, major recyclables (for example metals, glass, plastic, cardboard, newsprint, and office and mixed paper). Also include collection of organics and universal wastes, such as batteries and fluorescent tubes.

> **EdCC Performance:** Newsprint, colored paper, white paper, paperboard, post consumer paper, cardboard, metal, landscape material, Beverage/food containers, material that needs to be destroyed, ballasts, computers batteries, Cardboard boxes, large enter-mail campus envelopes fluorescent lights, tree contractor green materials.

(4) Recycling education: Provide education about campus recycling practices to incoming students, faculty and staff as well as ongoing education to the campus community that keeps campus users informed and engaged in recycling.

> **EdCC Performance:** Placement of collection bins to maximize recyclable streams. Education through special events (Earth Day, Building Community Day) electronic media, signs labeling, facilities monthly updates, conversations with students, staff, and faculty are ongoing efforts to educate campus body.

Recommendations:

- Recycling infrastructure must be widespread and convenient, but also strategically implemented. Studies of campus foot traffic and building occupancy and use can assist in efficient placement. Design of collection units (and a consistent design among those bins) also plays an important role in recycling effectiveness.
- Extend regular recycling opportunities to large campus gatherings such as athletic events, conferences, and events served by campus catering services.
- Develop a recycling program for campus organic waste.
- Evaluate the sustainability performance of e-waste recyclers.

Transportation Infrastructure and Incentives

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

Impact:
Conventional transportation is one of the most important contributors to climate change and local air pollution. Effective strategies can reduce these impacts, as well as community impacts and spillover costs such as traffic congestion. Furthermore, coherent campus-wide policies bring attention to transportation's impact.

Benchmarks:

The college addresses transportation issues in three ways:

(1) Strategies: The university is implementing appropriate strategies to reduce transportation impacts.

EdCC Performance:

- Employees can buy quarterly Community Transit bus passes for $4-5.
- Registered students receive free Community Transit bus passes.
- We have an Employee Transportation Coordinator who helps people find alternatives to driving to campus alone (e.g. carpool, bus routes, ride share).
- Bike lockers are available for people riding bikes to campus (limited #).
- We support statewide transit initiatives for staff and faculty with incentives.
- When possible, the College allows employees to telework or work a compressed schedule.

(2) Planning: The college plans and implements strategies to reduce its transportation-related impact on the environment and its surrounding community.

EdCC Performance: unsuccessfully applied for a grant to buy FLEX transit passes for employees for unlimited passage on Community Transit, Seattle Metro, and Sound Transit. Will continue this effort.

(3) Self Knowledge: The university 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; average fuel efficiency of the College's fleet vehicles; and the spatial distribution of campus users.

EdCC Performance: EdCC is required to conduct a transportation survey every two years. The survey captures employee commute modes. The results are compared to the prior survey to see how we have done in reducing the number of single occupant vehicles that are driven to campus by employees. The survey also gathers data on what commuters require to use transportation alternatives to driving alone. The results from 2007: (1) financial incentives; (2) improved transit service; (3) opportunity to work form home. This information was used to support the above grant application to fund enhanced transit passes for employees.

Recommendations:

- True-cost pricing for car parking (i.e., not subsidizing car use)
- Integrated housing-transportation strategies
- Low- or zero-emission or biofuel vehicles for grounds maintenance or shuttles
- Fleet maintenance issues (e.g., regular tune-ups, recycling of old motor oil)
- Transportation needs addressed in long-term planning in conjunction with housing, enrollment projections, and other major parameters.

Campuses can better describe and understand their transportation needs and performance with specific quantitative data on such contextual variables as:

- Campus size and user density
- Average cost of a parking space
- Trips by mode
- Density and infrastructure of surrounding area

Waste: Reduction, Reuse and Disposal

Goal: Reduce the impacts of the routine use of all materials with life-cycle strategies and user awareness. Raise awareness of campus users and purchasers, implement systems for exchange and reuse, and provide alternatives to default choices that generate waste.

Impact:
This category directly complements the next one, recycling: it is not enough to have a higher recycling rate if it only means more total recycling and more total waste. In addition to recycling all recyclable materials, we must design systems to (1) keep usable items out of the waste stream and (2) prevent waste generation before it happens.

Benchmarks:

This benchmark has four components:
(1) Provide waste-reduction information to campus users at relevant decision locations (campus supply depots, on-campus stores, dining facilities, and other points of purchase).

> **EdCC Performance**: Current focus on recycling: student orientation, staff return week in the fall, web and blackboard, signage and banners throughout campus.

(2) Influence key waste-generation leverage points that systematically bring waste onto campus (packaging choices, relationships with contractors for office supplies and food, etc.).

> **EdCC Performance**: No initiatives or programs at this time.

(3) Provide exchange or reuse programs for lower-volume products, consumer durables or intermittent waste streams, including:

- Office supplies, furniture, equipment, and surplus property
- Computers and electronic equipment
- Laboratory supplies and chemicals
- Dormitory move-in/move-out (furniture, mattresses, etc.)

EdCC Performance: All furniture, supplies and computers are surplused out by the purchasing department. If these are not sold or exchanged, they are recycled and what is left is tossed into the garbage. See the section on computer hardware above.

(4) Ensure proper disposal of both routine and hazardous waste streams, including:

- Laboratory supplies and chemicals and art supplies
- Composting of organic waste (landscape waste, post-consumer
- Food, waste grease/cooking oil)
- Reduce pre-consumer food waste by partnering with local soup kitchens and other food recovery programs

EdCC Performance: All hazardous waste is picked up, labeled, stored, and then correctly disposed of by a professional contractor who recycles or incinerates the product. Organic waste is picked up by the Cedar Grove Compost Co. at our expense (landscape and kitchen waste.) Working with Culinary Arts following the Brier Hall renovations to reduce pre-consumer (not served) food waste.

Recommendations:

- Develop a program for recycling campus organic waste: landscape material and food waste.

- Waste reduction: specify materials for use in packaging used by food services in order to avoid generating some unrecyclable waste in the first place. Similarly, contract language can require major vendors (e.g., for computer or maintenance equipment) to take back product packaging. See section on computer hardware above.

- Hazardous waste: many universities and colleges generate significant amounts of hazardous wastes, but often lack up-to-date disposal techniques. This area of waste management should be evaluated more closely, especially in regard to specific waste streams from particular departments, e.g. art supplies, etc.

- Management of chemical stores: a comprehensive chemical

inventory can reduce duplication and facilitate sharing of already purchased items. Just in time or on-demand purchasing in precise quantities can further reduce inventory costs and mitigate related safety concerns.

- Markets for surplus items and wastes: when reuse opportunities do not exist on campus, it is possible to redistribute materials for which there are local markets, such as processing facilities that demand those materials.

Next Steps

This assessment is the first of two that, together, will create a comprehensive picture of sustainability at Edmonds Community College. Part two of this assessment will include the following areas:

- Campus construction & development
- Ergonomic safety
- Food services
- Governance for sustainability
- Indoor air quality
- Purchasing
- Water use

The last step in this round of sustainability assessment will be to review, verify, and select recommendations for implementation. Sustainability assessment is an iterative process and, therefore, is never complete but becomes part of an ongoing process to make sustainable practice an integral part of the campus curriculum and operations.

Appendix A

Edmonds Community College

Sustainability Project
Print & Mail Center Paper Usage
March 2008

In fiscal year 2006 / 2007 over 8,200,000 copies were made on Print & Mail Center managed equipment (6,200,000+ in the print shop and 2,000,000+ at walk-up convenience copiers). At this time most of the colored paper that is used is made with 30% recycled post consumer waste but our standard 20# white paper is made with 100% virgin fiber.

Wikipedia's definition of paper recycling is: the process of recovering waste paper and remaking it into new paper products. There are three categories of paper that can be used as feedstocks for making recycled paper: mill broke, pre-consumer waste, and post-consumer waste. Mill broke is paper trimmings and other paper scrap from the manufacture of paper, and is recycled internally in a paper mill. Pre-consumer waste is material that was discarded before it was ready for consumer use. Post-consumer waste is material discarded after consumer use, including old magazines, old telephone directories, and residential mixed paper. Paper suitable for recycling is called "scrap paper".

Allied Waste Management is the campus recycle vendor here at Edmonds Community College. They accept all types of paper products and colors – all of which fit into the post-consumer waste category.

Purchasing and using recycled paper has many advantages:

- Fewer trees need to be harvested so more forests are preserved
- Less energy is used to produce recycled paper
- Less paper is put into the landfills
- Recycling causes 35% less water pollution and 74% less air pollution per the United States Environmental Protection Agency
- Reduces greenhouse gases that contribute to global warming

Cost difference between recycled and virgin fiber for 20#, 8.5 x 11 white paper (Feb 2008 pricing unless otherwise noted):

- West Coast Paper company, 100% virgin fiber paper,

PR6065, $2.73/ream

- Sample vendors from web sites, 30% post consumer waste paper unless otherwise noted:
  - Office Depot, 35% recycled Envirocopy, $3.60/ream
  - Staples, $3.30/ream
  - Costco, $3.33/ream
  - Unisource paper company, May 2007, $3.46/ream

- Worse case cost difference per ream = $3.60 – 2.73 = $0.87

Annual cost estimate to convert the Print & Mail Center operations to 30% recycled paper:

- 8,200,000 copies = 16,400 reams
- 16,400 x $0.87 = $ 14,268
- Assumes all paper used is white. Since this is not actually what happens the cost to convert should be less than the figure above.
- Assumes paper pricing and quantity of copies will not change