March 26, 2007

Warren Wilson College as an educational institution has a moral obligation to set a clear example for current and future generations. The College should demonstrate that the social and environmental Commitment evidenced in its Mission Statement and its Environmental Commitment Statement are carried out in its purchasing policies. This portion of the Pattern Language document builds upon those commitments and provides a guide for responsible purchasing of goods and services. Purchasing decisions are made by many individuals, all of whom must take into account the impact on the environment as well as the economic impact when making buying choices. The purchasers should have an understanding of the advantages of environmentally friendly and socially sound purchasing practices. Socially and environmentally conscious purchasing practices take research and reflection, so it is also necessary to encourage purchasers to seek new and better materials and business relationships. Bringing the impact on the environment into purchasing decisions must become an attitude used by all those making these decisions.

The College is interested in buying materials that promote the health and sustainability of our biosphere. When making purchasing decisions the following principles should be incorporated:

- Reuse existing materials
- Purchase recycled or remanufactured materials that have lower impact on the environment in their production, packaging, use, and, ultimately, their disposal than new materials
- Purchase locally provided materials and services where available, with preference given to locally owned and operated businesses
- Purchase long lived products made from renewable resources
- Avoid toxic materials where choices are available, e.g.; inks, paints high in volatile compounds, carpets high in noxious odors and chemicals, cleaning solutions containing hazardous or environmentally harmful components

Preference should be given to resource-efficient products, i.e., products that use the least or conserve the most energy, water, gas, and other nonrenewable or environmentally costly resources.

Gifts and donations should be subject to the same standards as purchased products.

Warren Wilson College understands the impact of doing business with companies with socially unethical business practices. Therefore, Warren Wilson College will seek to avoid purchasing from companies that have a history of discrimination based upon race, age, gender, sexual orientation, religion or physical handicap or who have demonstrated unfair labor practices. Warren Wilson College will also seek to avoid purchases with companies that use child labor or do not provide a living wage.
All persons charged with making purchasing decisions should keep these principles in mind and seek assistance in choosing vendors who meet them. The College will strive to develop an environmentally friendly vendor list for use in purchasing decisions where choices are available.

Establishing sustainable purchasing practices can be challenging. The United States Green Building Council has made this process easier with the development of LEED (Leadership in Energy and Environmental Design) EB (Existing Building). This certification process provides clear, specific criteria for ensuring sustainable purchasing patterns are established. Therefore, Warren Wilson College will use LEED EB criteria and documentation to assist us in setting and surpassing our sustainable purchasing goals.

The goal of the original Purchasing Pattern Language, dated May 5, 2001, was to have an environmentally friendly vendor list for use in purchasing decisions. Because of the diversity in types of purchases, and who makes these purchases, this has not occurred (with the exception of a list for FMTS construction which we expect to complete by April 2007). As specific, measurable and time constrained goals are set and actualized, relevant environmentally friendly product and vendor lists should be created for these items.

The success of changing our purchasing patterns lies with Warren Wilson College committing to reviewing all possible areas of sustainable purchasing. The attachment, following the LEED EB point system, clearly defines specific areas of purchasing patterns. Our challenge is to start setting one or two goals this and every year, by setting specific purchasing targets, assigning Champions (those directly responsible for those types of purchases) and Supporters: those who can help the Champions attain the specified goal (such as an academic class being assigned a project to research sustainable cleaning products). A goal for a specific area should define a commitment to purchase all, or some percentage of a product, if not already defined by the LEED EB requirements. The LEED EB requirements should be carefully studied, and our policies defined to meet the intent of the credit points that have been set as a goal for that year.

Consensus must also be achieved among all major stakeholders involved in those purchasing areas before the goal is set. All goals for previous year should be reviewed for compliance. If the college wishes to take an active role in establishing purchasing pattern habits, some means of documenting these efforts will be required. This will probably require a student crew to monitor these efforts.
Possible Sustainable Purchasing Practices and Goals Per LEED EB
Last Revision: January 3, 2006

I. Sustainable Sites:

SS Credit 1.1 & 1.2:
1) Exterior Maintenance Equipment: Purchase low-emitting, electric, and/or low noise maintenance equipment
   Champion: Landscaping
   Supporters: Purchasing
2) Plantings: Planting focus will be native, non-invasive, and assist in the academic educational process.
   Champion: Landscaping
   Supporters: Purchasing
3) Animal, pest and vegetation control: We shall use low toxicity, environmentally friendly control methods.
   Champions: Landscaping (Vegetation Control), Customer Service (Pest control)
4) Landscape Waste: We will avoid landfill costs by reusing/recycling all landscape waste.
   Champions: Landscaping
   Supporters: Ecodorm occupants, Garden, Recycling
5) Irrigation Management: Shall not be purchased with the exception of the existing systems for the Soccer Fields, and the Organic garden.
   Champion: Landscaping
6) Fertilizer Use, core campus. We shall not use petroleum based fertilizers for the core campus.
   Champion: Landscaping
7) We will not use petroleum based fertilizers for the farm.
   Champion: Farm
8) Snow removal: We will keep salt use down to a specified level.
   Champion: Landscaping
9) Exterior Cleaning: We shall only use environmentally friendly, GreenSeal or equivalent cleaning products for exterior cleaning of our buildings in the core campus.
   Champion: Building Services
10) Exterior Paints & Sealants: “X” percent of our exterior paints will be low VOC IAW LEED standards.
    Champion: Painting Services, Campus Support & Construction Services, Carpentry Services.
    Supporters: Purchasing

SS Credit 3.1: Alternative Transportation: See Innovation and Design

SS Credit 3.2 Alternative Transportation: Bicycle Storage & Changing Rooms:
We shall design, build and install bike racks sized to accommodate 125% of the current bike demand.

Champion: Architectural Services, Campus Support & Construction Services

SS Credit 3.2 Alternative Transportation: Alternative Fuel Vehicles:
1) We will increase alternative fuel or hybrid vehicles to meet 3% of the building occupants.
2) We will increase alternative fuel and hybrid vehicles to meet 3% of the campus Motorfleet.
3) We will increase alternative fuel and hybrid vehicles to meet 3% of our on campus vehicle needs.
4) (Not in LEED): We will focus on the purchase of small, four cylinder trucks, unless specific justifications are made and needed for larger vehicles.

Champion: Automotive Services

SS Credit 3.3: Alternative Transportation: Alternative Fuel Vehicles: ISN'T THIS THE SAME AS 3.2???

We will provide alternative fuel refueling station(s) for 3% of the total parking capacity, or provide/achieve in some other way alternative fuel vehicles or hybrid vehicles for 3% of building occupants. (Biodiesel, Ethanol, electric and hybrid vehicles).

We will do this by having a minimum of 3% of the on campus work vehicles using alternative fuels, and a minimum of 3% of the motorfleet shall use alternative fuels.

Champions: FMTS Director, Architectural Services, Automotive Services
Supporters: Greening Crew for necessary research

SS Credit 4.1, 4.2: Reduced Site Disturbance: Protect or Restore Open Space:
Have in place native or adapted vegetation or other ecologically appropriate features for 50%, and 75% of the site excluding the building footprint.

We will do this by ensuring every landscape renovation attains these points.

Champion: Landscaping

SS Credit 5.1, 5.2: Stormwater Management: Rate and Quantity Reduction:
Limit disruption and pollution of natural water flows by managing stormwater runoff. Mitigate 25%, and 50% of the annual stormwater falling on the site.

We will install the appropriate stormwater management practices whenever we upgrade the stormwater systems around a building site.

Champion: Architectural Services, Campus Support & Construction, Landscaping Services

SS Credit 6.1: Heat Island Reduction: Non-roof:
Reduce heat islands to minimize the impact on microclimate and human and wildlife habitat.

Provide from the existing canopy, or within five years of the landscape installation a canopy of 30% of the non-roof impervious surfaces on the site.

We will do so whenever we landscape or relandscape a building. We will ensure at least 30% of the non-roof impervious surfaces on the site will be canopied within five years of landscaping.

Champion: Landscaping Services

SS Credit 6.2: Heat Island Reduction: Roof:
Install Energy Star compliant, high reflectance and high emissivity roofing material that has a minimum emissivity of 0.9 when tested IAW ASTM 408 for a minimum of 75% of the roof, or a green roof for 50% of the roof.

For shingled roofs, we will install highly reflective Elk Cool Color series asphalt shingles. While this will not comply with this credit, the product is much more highly reflective than typical asphalt shingle roofs. Future metal roofs shall be LEED compliant. For flat roofs, we will specify LEED compliant roofing, and/or consider green roofing. Underlayment shall be Titanium in lieu of felt. Titanium is a light colored product.

Champion: Architectural Services, Carpentry Services

SS Credit 7: Light Pollution Reduction:
Eliminate light trespass from the building and site, improve night sky access and reduce development impact on nocturnal environments.

We will comply by ensuring all outdoor luminaries 50 watts are greater will not directly emit light to the night sky. All new carriage lights will be ??? model ???. Existing carriage heads will be replaced over a 5 year (?) period.

Champion: Electrical Services
II. Water Efficiency:

WE Credit 1.1, 1.2: Water Efficient Landscaping:
Reduce Water Use.
Limit or eliminate the use of potable water for landscape irrigation.

We will comply with this requirement by not allowing landscape irrigation for any building site.
Champion: Architectural Services, Landscaping Services

WE Credit 2: Innovative Wastewater technologies:
Reduce use of potable water for building sewage conveyance by 50%, based on a baseline per LEED standards, or treating 100% of all building wastewater to a treatment system that provides treatment to tertiary levels.

We will meet this by calculating current conveyance. We must know the current water fixture load in all buildings. See also WE 3.1 and 3.2
Champion: Plumbing Services

WE Credit 3.1, 3.2: Maximize fixture potable water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

Provide a 10% or 20% reduction in fixture water use from the baseline. In all cases, a water meter is required for each building.

We will do this by converting all urinals to waterless, all toilets above 1.5 gpf to 1.5 gpf, or dual flush units, shower aerators to 1.8 gpm units, all handwashing aerators to ?? gpm, and all kitchen sinks to ?? gpm. We will replace all handsoap dispensing units with foam soap units.
Champion: Plumbing Services
III. Energy & Atmosphere:

It is important to note that no points in EA can be met unless the prerequisites are met. That said, all purchasing shall be accomplished IAW these points until the prerequisites can be met.

EA Prerequisite 1: Existing Building Commissioning:
Verify that fundamental building systems and assemblies are performing as intended to meet current needs and sustainability requirements.

Develop a comprehensive building operation plan that meets the requirements of the current building usage. This must include heating, cooling and humidity control, lighting, safety and building automation control systems. Document all results and fix the problems. Retest.
Since we are talking about the entire campus, we should focus on the worst building, with a five year timeline to complete all buildings.
Champion: Director of Facilities

EA Prerequisite 2: Establish the minimum level of energy efficiency for the building and systems. Demonstrate the buildings meet an EPA Energy Star rating of at least 60 using the EPA’s Portfolio Management Tool for the building types addressed by Energy Star.
Champion: Greening Crew

EA Prerequisite 3: Ozone Protection:
Reduce Ozone depletion. Zero use of CFC refrigerants in HVAC&R base building systems.

We will comply by removing all CFC in our HVAC equipment.
Champion: HVAC Services

EA Credit 1: Optimize Energy Performance:
For all new construction, we will comply with LEED NC 2.2, with a goal of a 50% reduction in energy use for all new construction. For all existing buildings we will follow these guidelines:

**Carpentry**

a) All exterior window replacements in rental house and general campus buildings will be double paned, low E casement windows with thermal breaks, and the following minimum criteria: infiltration, center of glass, overall R value of ???
b) When roof insulation is increased, all penetrations shall be sealed, reflective bubble wrap installed directly on top of the ceiling, and wet cellulose shall be added to increase the R value to a minimum of 40. In lieu of this, the roof line shall be sprayed with a minimum urethane foam value of ??
c) When floor insulation is increased, all penetrations shall be sealed, reflective bubble wrap installed directly on bottom of the subfloor, and fiberglass shall be added to increase the R value to a minimum of 20. In lieu of this, the roof line shall be sprayed with a minimum urethane foam value of ??
d) Poorly insulated or caulked windows/walls etc. will be highly considered for weatherizing.

**Plumbing:**

a) Domestic hot water boilers that are failing shall be replaced with Renor ??? instantaneous hot water boilers.

b) Residential hot water boilers shall be replaced with Renor ??? instantaneous hot water boilers.

c) For general campus buildings, hot water generators at the sinks shall be purchased when the building hot water tank fails.

**HVAC:**

a) Electric motors shall be premium energy efficient, then energy efficient, and only standard when the others are not available.

b) Belts shall be Dayco Gold Premium grade, cog ?? Linked belts shall be considered.

c) Where new exhaust systems will be installed, Heat or Energy Recovery Ventilators will be used in lieu of exhaust fans when new applications are required.

d) Split systems shall be geothermal heat pump, or air heat pump with a minimum SEER of 16.

e) Fume hoods shall be low flow.

f) Exhaust fan motor replacement will require test and balancing for air flows, and replacing adjustable with fixed sheaves for the desired flows.

g) Pumps shall be balanced, and impellers trimmed.

h) Digital Controls or timeclock control will be considered for equipment running 24/7.

i) Uninsulated piping shall receive priority consideration for insulation.

j) Residence Halls without individual thermostat control will be highly considered for individual control.

**Electrical:**

a) Interior lighting shall be PL, T8 and low mercury.

b) Street lighting shall be HPS with maximum wattages of ??, and full cutoff

c) General area lighting shall be either:
   - Bollard lighting using LED lights in cedar or locust bollards (non treated), or
   - Carriage style with maximum wattage of ??? and full cutoff

d) Building exterior lights will be ??HPS or ??compact fluorescent with wattages of ??

e) Sconce lighting shall be a maximum of ??? watts, compact fluorescent

f) Office lighting shall be 20/80 direct/indirect fixtures, models ??????? for surface mount, ??? for grid mount, and ??? for pendant mount, or reused fixture

g) Motion detectors shall be used for all storage, restroom and copier spaces.

h) Incandescents shall only be purchased as approved by the Buildings and Grounds Committee, and only for special applications such as the theater, ???

i) All ballasts shall be electronic, and 10% THD or less.

j) Decorative lighting shall be ???

k) No quartz?

l) LED will be considered.

m) Exit fixtures shall be ??? Ecodorm or LED
**Computer equipment:**

a) All new monitors shall be LCD

b) All computers shall be set up by the computer center with the following energy saving parameters (monitor shutdown, hard drive shut down, etc.??).

c) Consider motion detectors to control monitors, or power strips that remain unpowered until the CPU is turned on.

d) Consider central printer usage.

e) Individual ink cartridges for colors shall be used to reduce recycling waste.

f) Toner cartridges are preferred to minimize recycling waste.

The relevant Champions are the departments responsible for these areas.

**EA Credit 2.1-2.4: On-Site and Off-Site Renewable Energy:**

Encourage renewable energy by purchasing 15% (1 point), 30% (2 points), 45% (3 points), or 60% (4 points) of the campus energy via renewable energy certificates.

The college is committed to 100% Green Power. Therefore, we qualify for all points. In addition, 2 IU (Innovations in Upgrades) points are also possible.

Champion: Business Office

**EA Credit 4: Additional Ozone Protection:**

Do not operate base building HVAC, refrigeration, or fire suppression systems that contain CFCs, HCFCs, or Halons.

Champion: HVAC Services
IV. Materials and Resources:

It is important to note that no points in MR can be met unless the prerequisites are met. That said, all purchasing shall be accomplished IAW these points until the prerequisites can be met.

MR Prerequisite 1.1: Source Reduction & Waste Management-Waste Stream Audit:
Establish minimum source reduction and recycling program elements and quantify current waste stream production volume.

To meet and exceed this requirement, we will perform a once a year overall waste audit, and at least 5 building “garbology studies”. The current baseline is 2001 (?). Over a ten (?) year period, all (?) buildings will be audited. The yearly campus audit and the individual garbology studies will focus on reducing overall waste (both recyclables and non recyclables), and increasing recycling quantities of our waste. Since we cannot focus on all areas of waste, a yearly plan will be developed to reduce overall waste, and increase recycling by focusing on the top 20% of the waste materials (since they generally will produce about 80% of our waste). How will this tie into our campus indicators?)

Champions: Recycling and Waste Management Services, Building Managers, Supporters: Academics integrating reports into their curricula, volunteering for garbology studies, Student Affairs hosting garbology studies, getting the students to participate more fully in recycling.
Participants: All campus employees: faculty, staff, and volunteers, students, and contractors, and food services.

MR Prerequisite 1.2: Source Reduction & Waste Management-Storage & Collection:
Provide floor plans indicating recycling areas for all buildings. Show layout of Recycling and Waste Management facilities reflecting the scope and breadth of the recycling program.
Champion: Recycling and Waste Management Services.
Supporters: FMTS Architect, and Campus Support and Construction (to ensure areas are provided for all new construction), Campus Communications and Support Services (to provide the drawings)

MR Credit 1.1, 1.2: Develop a Waste Management Policy that diverts 50% or 75% of construction, demolition, and land-clearing debris from landfill and incineration by weight or volume.
Champions: Campus Support and Construction Services, Carpentry Services.
Supporters: Recycling and Waste Management Services.

MR Prerequisite 2: Toxic Material Source Reduction-Reduced Mercury in Light Bulbs:
Maintain mercury content of all mercury containing light bulbs below 100 picograms per lumen per hour for all mercury containing light bulbs. We will comply with this requirement by having our vendors provide all relevant data, and by us determining our current based upon our current purchasing patterns. We will then either maintain, or work to meet both this prerequisite, and Credit 6
MR Credit 6: Additional Toxic Material Source Reduction-Reduced Mercury in Light Bulbs:
Maintain mercury content of all mercury containing light bulbs below 80 picograms per lumen per hour for all mercury containing light bulbs. See above.

Our Purchasing Policy shall be to develop a baseline to determine our current compliance/noncompliance with this prerequisite, and this point. We will then determine which 20% of noncompliant lamps impact 80% of our results, and develop a plan to eliminate these sources of mercury. We will then perform yearly audits on our lamp purchases with our vendors to ensure compliance. We will provide MSDS sheets for every lamp type purchased that year.

Champion: Electrical Services
Supporters: Purchasing Services and Electrical Supplies Vendors (have purchasing coordinate audits with our vendors). Academic Affairs to have students run the calculations confirming compliance.

MR Credit 2.1-2.5: Optimize Use of Alternative Materials, 10-50% of Total Purchases:
As a minimum, this will cover office paper, office equipment, furniture, furnishings, and building materials for use in the building and on the site. Points are awarded (up to 5) for every 10% of total purchases that achieve the following criteria:
- contains at least 70% re-salvaged material from onsite or outside the organization.
- contains at least 10% post consumer, 20% post industrial material
- contains at least 50% rapidly renewable materials
- is FSC certified wood
- Contains at least 50% materials harvested and processed, or, extracted and processed within 500 miles of the project.

A policy shall be established regarding the purchasing of items designated to be on the list. Purchases shall be tracked on a yearly basis by our vendors.

Areas to consider:
- Office Furniture, Dining Furniture, and Residence Hall Furniture (common interior and exterior, and, individual rooms).
- Building Materials for renovations (See the Sustainable Construction Manual).
- Office Paper
- Print Shop Paper
- Computer Paper
- 3M Command Hooks (have students leave these on the wall. We will recycle and give back to the residence halls for the following year)
- Use of shared printers
- Use of recycled printer cartridges
- Office supplies? Folders, Pens, bins, garbage containers
- Bookstore supplies

Champions: the Relevant responsible department
Supporters: Purchasing Services and our vendors.
MR Credit 3.1, 3.2: Optimize Use of IAQ Compliant Products-45%, 90% of Annual Purchases

One point is awarded, with a maximum of 2 points, for each 45% of annual purchases calculated on a cost basis that confirms with the following criteria:

a) Adhesives and sealants with a VOC content less than the limits of South Coast Air Quality Management District (SCAQMD) Rule #1168, or sealants used as fillers that meet or exceed the requirements of Bay Air Quality Management District Regulations 8, Rule 51, OR

b) Paints and coatings with VOC emissions that are Green Seal Standard GS-11 compliant, OR

c) Carpets that meet CRI Green Label Plus Carpet Testing Program, OR

d) Carpet cushion that meets CRI Green Label Testing Program OR

e) Composite panels and agrifiber products that contain no add urea-formaldehyde resins.

Use MSDS sheets to obtain compliance. Work in conjunction with the Safety Officer to ensure VOC limits clearly posted.

Champions: Campus Support Services & Carpentry Services, items a, c, d, e. Painting Services item b.

MR Credit 4.1-4.3: Sustainable Cleaning Products & Materials-30%, 60%, 90% of Total Purchases

Reduce the environmental impacts of cleaning products, disposable janitorial paper products and trash bags. One point will be awarded for each 30% of the total annual purchase of these products on a cost basis that meet the following criteria:

a) Cleaning products that are Green Seal GS-37 compliant, if applicable. If not applicable, use the California Code of Regulations maximum allowable VOC levels.

b) Disposable janitorial paper products and trash bags that meet the minimum requirements of US EPA’s Comprehensive Procurement Guidelines.

Other areas to consider that may or may not fall within the scope of LEED:

- Reduction in the use of Chlorine for cleaning.
- Reduction in the use of chlorine for pool services
- Non-antibiotic foam soap.

Champions: Building Services, and Food Services
Supporters: Purchasing Services (will work with the vendors to provide the required calculations.)
V. Indoor Environmental Quality

EQ 5.1: Purchase MERV 13 Filters
Champion: HVAC Services

(Address Views and daylighting in our interior pattern language)

VI. Innovation in Upgrades, Modifications, and Maintenance:

ID 1: Purchase 100% Green Power for the campus
ID 2: Greening of Mobile on road emissions: Develop an On campus, Off campus planes
ID 3: Green Mobile Off road emissions: Develop a plan to convert at least 25% of all mobile off road emissions (including equipment such as weed eaters and lawnmowers) to low emissions fuels.
ID 4: Harvest and process at least 50% of our foods within 500 miles of our campus (See MR Credit 2.1-2.5)
ID 5: The College is committed to purchasing Energy Star certified products in all areas for which the rating exists, per our agreement with the ACUPCC approved by PAC October 30, 2007

Commit to purchasing 25% of all materials from locally owned vendors/stores.
Beef that is Hormone and antibiotic free
Chicken eggs that are hormone and antibiotic free
Blinds large slat
Art Department: Clay from the campus, low toxicity inks
Chemistry: use micro quantities for lab experiments.
Keep hazardous waste expenses to less than some percentage based upon a per capita (science department) basis.