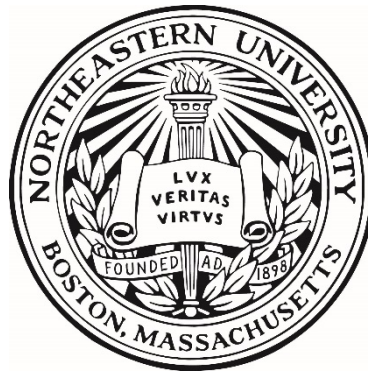


SUSTAINABLE PRACTICES
and
OPERATIONS GUIDELINES



Northeastern University
Boston, MA
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“Environmental sustainability is an issue of local, national, and global significance. The consequences of inaction would be shared by all humanity. Therefore, all individuals and institutions share responsibility for taking action to create a sustainable environment. The leadership of Northeastern University is fully committed to this effort.

Going forward, we will accelerate the greening of all our facilities in Boston and elsewhere. I have made it a top priority for our university to assess our options and define assertive and responsible actions to speed our progress towards environmentally friendly policies, systems and facilities. Sustainability will factor into all of our decisions and plans for new services, building designs, and product choices. I appeal to all faculty, staff, and students to take their own individual steps towards making Northeastern an exemplar in sustainability.”

President Joseph Aoun, Northeastern University

1.0 STATEMENT OF GUIDELINE

It is the guideline of Northeastern University to:

- Institute practices that reduce waste by increasing product efficiency and effectiveness,
- Purchase products that minimize environmental impacts, toxins, pollution, and hazards to community safety to the greatest extent practical, and
- Prefer products that include recycled content, are durable and long-lasting, conserve energy and water, use agricultural fibers and residues, reduce greenhouse gas emissions, use unbleached or alternative chlorine free agents, are lead-free and mercury-free, and use wood from sustainably harvested forests.

2.0 PURPOSE

This Guideline is developed in order to:

- Conserve natural resources, reduce our global impact and carbon footprint;
- Minimize environmental impacts such as pollution and use of water and energy;
- Eliminate or reduce toxins that create hazards to our community;
- Support strong recycling markets;
- Reduce materials that are disposed of in landfills;
- Increase the use of and availability of environmentally preferable products that protect the environment;
- Identify environmentally preferable products and distribution systems;
- Create a model for successfully purchasing environmentally preferable products that encourages others in our community to adopt similar goals.

3.0 SPECIFICATIONS

3.1 Source Reduction

- 3.1.1 Northeastern University shall institute practices that reduce waste and result in the purchase of fewer products whenever practical.
- 3.1.2 Northeastern University shall purchase remanufactured products such as laser toner cartridges, automotive parts, and other equipment whenever practical, but without reducing safety, quality or effectiveness.
- 3.1.3 Northeastern University shall require all equipment bought after the development of this guideline to be compatible with source reduction goals as referred to in this section (3.1), when practical.
- 3.1.4 All buyers shall consider short-term and long-term costs in comparing product alternatives, when feasible. This includes evaluation of total costs expected during the time a product is owned, including, but not limited to, acquisition, extended warranties, operational life cycle cost, supplies, maintenance, disposal costs and expected lifetime compared to other alternatives.
- 3.1.5 Products that are durable, long lasting, reusable or refillable are preferred whenever feasible.
- 3.1.6 Northeastern University requests vendors to use the minimum amount of packaging necessary for product protection, to the greatest extent practical.
- 3.1.7 Packaging that is reusable, recyclable or compostable is preferred, when suitable uses and programs exist.
- 3.1.8 Vendors shall be encouraged to take back and reuse pallets and packaging materials.
- 3.1.9 Suppliers of rented equipment shall be encouraged to take back equipment for reuse or environmentally safe recycling when Northeastern University replaces such equipment, whenever possible.

3.2 Recycled Content Products

- 3.2.1 All products for which the United States Environmental Protection Agency (USEPA) has established minimum recycled content standard guidelines, such as those for printing paper, office paper, janitorial paper, construction, landscaping, parks and recreation, transportation, vehicles, miscellaneous, and non-paper office products, shall contain the highest postconsumer content practical, but no less than the minimum recycled content standards established by the U.S. EPA Guidelines.
- 3.2.2 Copiers and printers bought shall be compatible with the use of recycled content products.
- 3.2.3 Northeastern University shall purchase re-refined lubricating and industrial oil for use in its vehicles and other equipment, as long as it is certified by the American Petroleum Institute (API) as appropriate for use in such equipment.
- 3.2.4 When specifying asphalt concrete, aggregate base or Portland cement concrete for outdoor construction projects, Northeastern University shall use recycled, reusable or reground materials when practical.
- 3.2.5 Northeastern University shall specify and purchase recycled content transportation products, including signs, cones, parking stops, delineators, and barricades, if suitable.

3.2.6 All paper intended for general distribution shall contain recycled content.

3.3 Energy and Water Savings

- 3.3.1 Where applicable, energy efficient equipment shall be purchased with the most up-to-date energy efficiency functions. This includes, but is not limited to, high efficiency space heating systems and high efficiency space cooling equipment.
- 3.3.2 Fan powered boxes and fan coil units shall be provided with electrically commutated (EC) motors.
- 3.3.3 Variable frequency drives shall be provided on all pumps and fans wherever practical.
- 3.3.4 Applicable HVAC equipment shall meet the requirements for MassSave Upstream incentives in accordance with the requirements stated here:
<http://www.masssave.com/en/professionals/incentives/upstream-hvac>
- 3.3.5 When practical, Northeastern University shall replace inefficient lighting with energy efficient equipment. Fixtures shall be selected such that design of the space will achieve a minimum 25% reduction in lighting power density (watts/sf) compared to the lighting power density allowed under the state energy code.
- 3.3.6 Design teams, if utilized, shall produce a lighting Comcheck showing that the 25% lighting power density goal has been achieved. If design and fixture selection changes during construction, a revised lighting Comcheck shall be produced reflecting the as built condition.
- 3.3.7 LED fixtures shall be selected from the Design Lights Consortium list of qualified products (see www.designlights.org) or shall be Energy Star certified. A minimum of 75% of fixtures (by fixture count) shall be DLC or Energy Star certified LEDs unless space is of a nature where desired fixtures are not available on either list of products.
- 3.3.8 Construction documents shall clearly indicate to contractor that Northeastern is seeking MassSave incentives for light fixtures on all projects, and that overall lighting power density must not change during construction. "Or equal" fixtures shall be DLC or Energy Star certified if the scheduled fixture was DLC or Energy Star certified
- 3.3.9 All products purchased by Northeastern University and for which the U.S. EPA Energy Star certification is available shall meet Energy Star certification, when practical. When Energy Star labels are not available, choose energy efficient products that are in the upper 25% of energy efficiency as designed by the Federal Energy Management Program.
- 3.3.10 Northeastern University shall purchase water-saving products whenever practical.
- 3.3.11 Northeastern University shall establish temperature set-points for heating and cooling seasons.

3.4 Green Building - Construction and Renovations

- 3.4.1 All building and renovations undertaken by Northeastern University shall follow Green Building practices for design, construction, and operation, where appropriate, as described in the LEED™ Rating System.

3.5 Landscaping

- 3.5.1 All landscape renovations, construction and maintenance by Northeastern University, including workers and contractors providing landscaping services for Northeastern

University, shall employ Charles River Watershed-Friendly Landscaping or sustainable landscape management techniques for design, construction and maintenance whenever possible, including, but not limited to, integrated pest management, drip irrigation, composting, and procurement and use of mulch and compost that give preference to those produced from regionally generated plant debris and/or food waste programs.

- 3.5.2 Plants should be selected to minimize waste by choosing species for purchase that are appropriate to the microclimate, species that can grow to their natural size in the space allotted them, and perennials wherever feasible for color. Native and drought-tolerant plants that require no or minimal watering once established are preferred.
- 3.5.3 Hardscapes and landscape structures constructed of recycled content materials are encouraged. Northeastern University shall limit the amount of impervious surfaces in the landscape, wherever practical. Permeable substitutes, such as permeable asphalt or pavers, are encouraged for walkways, patios and driveways.

3.6 Storm water Management

- 3.6.1 Storm water runoff from all University facilities and construction projects include site evaluation, construction and redevelopment to ensure that all point source storm water discharges be managed according to sound Storm water Best Management Practices.
- 3.6.2 “Low impact development”(LID) is Northeastern University’s preferred approach for the management of storm water, for inclusion in the planning and construction of new, redeveloped, or existing areas of University lands and facilities, and to guide site development by mimicking the natural hydrological system functions of discharge, frequency, recharge and volume.
- 3.6.3 Facilities and maintenance staff must be trained to effectively maintain green storm water practices to facilitate successful operations and maintenance of the University’s storm water management systems.

3.7 Toxins and Pollution

- 3.7.1 To the extent practical, no cleaning or disinfecting products (i.e. for janitorial or automotive use) shall contain ingredients that are carcinogens, mutagens, or teratogens. These include chemicals listed by the U.S. EPA or the National Institute for Occupational Safety and Health on the Toxics Release Inventory.
- 3.7.2 The use of chlorofluorocarbon-containing refrigerants, solvents and other products shall be phased out whenever possible.
- 3.7.3 All surfactants and detergents shall be readily biodegradable and, where practical, shall not contain phosphates.
- 3.7.4 When maintaining buildings and landscapes, Northeastern University shall manage pest problems through prevention and physical, mechanical and biological controls. Northeastern University may either adopt and implement an organic pest management guideline and practices or adopt and implement an Integrated Pest Management (IPM) guideline and practices using the least toxic pest control as a last resort.

- 3.7.5 When maintaining buildings, Northeastern University shall use products with the lowest amount of volatile organic compounds (VOCs), highest recycled content, and low or no formaldehyde when purchasing materials such as paint, carpeting, adhesives, furniture and casework.
- 3.7.6 Northeastern University shall reduce or eliminate its use of products that contribute to the formation of dioxins and furans. This includes, but is not limited to:
 - 3.7.6.1 Purchasing paper, paper products, and janitorial paper products that are unbleached or that are processed without chlorine or chlorine derivatives, whenever possible.
 - 3.7.6.2 Restrict the purchase of products that use polyvinyl chloride (PVC) such as, but not limited to, office binders, furniture, flooring, and medical supplies whenever practical.
- 3.7.7 Northeastern University shall purchase products and equipment with no lead or mercury whenever possible. For products that contain lead or mercury, Northeastern University shall give preference to those products with lower quantities of these metals and to vendors with established lead and mercury recovery programs.
- 3.7.8 When replacing vehicles, Northeastern University shall consider less-polluting alternatives to diesel such as compressed natural gas, bio-based fuels, hybrids, electric batteries, and fuel cells, as available.
- 3.7.9 Implement, publicize, and maintain a program of single-occupant vehicular trip reduction incentives including, but not limited to, carpool matching, bicycling incentives, transit passes, posting of schedules, rates and routes, vanpool arrangements, and any other incentives that conform to the Massachusetts Department of Environmental Protection's (MADEP) Rideshare Program.

3.8 Forest Conservation

- 3.8.1 To the greatest extent practical, Northeastern University shall not procure wood products such as lumber and paper that originate from forests harvested in an environmentally unsustainable manner. When possible, Northeastern University shall give preference to wood products that are certified to be sustainably harvested by a comprehensive, performance-based certification system. The certification system shall include independent third-party audits, with standards equivalent to, or stricter than, those of the Forest Stewardship Council certification.

3.9 Agricultural Bio-based Products

- 3.9.1 Vehicle fuels made from non-wood, plant-based contents such as vegetable oils are encouraged whenever practical.
- 3.9.2 Paper, paper products and construction products made from non-wood, plant-based contents such as agricultural crops and residues are encouraged whenever practical.

4.0 PRIORITIES

- 4.1.1 The health and safety of workers and citizens is of utmost importance and takes precedence over all policies.
- 4.1.2 Northeastern University has made significant investments in developing a successful recycling system and recognizes that recycled content products are essential to the

continuing viability of that recycling system and for the foundation of an environmentally sound production system. Therefore, to the greatest extent practical, recycled content shall be included in products that also meet other specifications, such as chlorine-free or bio-based.

- 4.1.3 Nothing contained in this guideline shall be construed as requiring a department, purchaser or contractor to procure products that do not perform adequately for their intended use, exclude adequate competition, or are not available at a reasonable price in a reasonable period of time.
- 4.1.4 Nothing contained in this guideline shall be construed as requiring Northeastern University, department, purchaser or contractor to take any action that conflicts with local, state or federal requirements.

5.0 IMPLEMENTATION

- 5.1.1 Successful bidders shall certify in writing that the environmental attributes claimed in competitive bids are accurate.
- 5.1.2 Upon request, buyers making the selection from competitive bids shall be able to provide justification for product choices that do not meet the environmentally preferable purchasing criteria in this guideline.
- 5.1.3 Vendors, contractors and grantees shall be encouraged to comply with applicable sections of this guideline for products and services provided to Northeastern University, where practical.

6.0 PROGRAM EVALUATION

- 6.1.1 The Sustainability Committee shall periodically evaluate the success of these guidelines.

7.0 DEFINITIONS

- 7.1.1 “Agricultural Bio-Based Products” means commercial or industrial products (other than food or feed) that utilize agricultural crops or residues but does not include products made from forestry materials.
- 7.1.2 “Charles River Watershed Friendly Landscaping” means working with the natural ecosystems of the Boston Area to foster soil health, to reduce runoff and pollution, prevent and reuse plant waste, conserve water and other natural resources within applicable regulations set forth by the Boston Water and Sewer Commission and the Massachusetts Water Resources Authority.
- 7.1.3 “Buyer” means anyone authorized to purchase or contract for purchases on behalf of this jurisdiction or its subdivisions.
- 7.1.4 “Chlorine free” means products processed without chlorine or chlorine derivatives.
- 7.1.5 “Contractor” means any person, group of persons, business, consultant, designing architect, association, partnership, corporation, supplier, vendor or other entity that has a contract with Northeastern University or serves in a subcontracting capacity with an entity having a contract with Northeastern University for the provision of goods or services.

- 7.1.6 “Dioxins and furans” are a group of chemical compounds that are classified as persistent, bio-accumulative, and toxic by the Environmental Protection Agency.
- 7.1.7 “Energy Star” means the U.S. EPA’s energy efficiency product labeling program.
- 7.1.8 “Energy Efficient Product” means a product that is in the upper 25% of energy efficiency for all similar products, or that is at least 10% more efficient than the minimum level that meets Federal standards.
- 7.1.9 “Federal Energy Management Program” is a program of the Department of Energy that issues a series of *Product Energy Efficiency Recommendations* that identify recommended efficiency levels for energy-using products.
- 7.1.10 The “Forest Stewardship Council” is a global organization that certifies responsible, on-the-ground forest management according to rigorous standards developed by a broad variety of stakeholder groups.
- 7.1.11 “Integrated Pest Management” (IPM) is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment.
- 7.1.12 “LEED™ Rating System” means the self-assessing system developed by the U.S. Green Building Council designed for rating new and existing commercial, institutional, and residential buildings.
- 7.1.13 “Organic Pest Management” prohibits the use and application of toxic chemical pesticides and strives to prevent pest problems through the application of natural, organic horticultural and maintenance practices.
- 7.1.14 “Postconsumer Material” means a finished material which would normally be disposed of as a solid waste, having reached its intended end-use and completed its life cycle as a consumer item, and does not include manufacturing or converting wastes.
- 7.1.15 “Practical” means whenever possible and compatible with local, state and federal law, without reducing safety, quality, or effectiveness and where the product or service is available at a reasonable cost in a reasonable period of time.
- 7.1.16 “Pre-consumer Material” means material or by-products generated after manufacture of a product is completed but before the product reaches the end-use consumer. Pre-consumer material does not include mill and manufacturing trim, scrap, or broke which is generated at a manufacturing site and commonly reused on-site in the same or another manufacturing process.
- 7.1.17 “Recovered Material” means fragments of products or finished products of a manufacturing process, which has converted a resource into a commodity of real economic value, and includes pre-consumer and postconsumer material but does not include excess resources of the manufacturing process.

- 7.1.18 “Recycled Content” means the percentage of recovered material, including pre-consumer and postconsumer materials, in a product.
- 7.1.19 “Recycled Content Standard” means the minimum level of recovered material and/or postconsumer material necessary for products to qualify as “recycled products.”
- 7.1.20 “Recycled Product” means a product that meets [jurisdiction’s] recycled content policy objectives for postconsumer and recovered material.
- 7.1.21 “Remanufactured Product” means any product diverted from the supply of discarded materials by refurbishing and marketing said product without substantial change to its original form.
- 7.1.22 “Reused Product” means any product designed to be used many times for the same or other purposes without additional processing except for specific requirements such as cleaning, painting or minor repairs.
- 7.1.23 “Source Reduction” refers to products that result in a net reduction in the generation of waste compared to their previous or alternate version and includes durable, reusable and remanufactured products; products with no, or reduced, toxic constituents; and products marked with no, or reduced, packaging.
- 7.1.24 “Teratogens” are defined as agents that cause malformations of an embryo or fetus.
- 7.1.25 The “Toxics Release Inventory” (TRI) is a publicly available U.S. EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities.
- 7.1.26 “U.S. EPA guidelines” means the Comprehensive Procurement Guidelines established by the U.S Environmental Protection Agency for federal agency purchases as of May 2002 and any subsequent versions adopted.
- 7.1.27 “Water-Saving Products” are those that are in the upper 25% of water conservation for all similar products, or at least 10% more water-conserving than the minimum level that meets the Federal standards.

8.0 EFFECTIVE DATES

8.1 This guideline shall take effect on [date]

Signed