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Terry Husseman

Sustainable School Awards

A Guide to Sustainability in Your School

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Abstract

This guide serves as a resource for schools wishing to compete in the Terry Husseman Sustainable School Awards Program. The guide helps schools set up sustainability programs and provides ideas for improving existing programs and curricula.

Acknowledgements

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Introduction

This guide serves as a resource for schools wishing to compete in the Terry Husseman Sustainable School Awards Program. The guide helps schools set up sustainability programs and provides ideas for improving existing programs and curricula.

A sustainable school creates a learning community committed to a more sustainable future. Some basic ways to keep your school sustainable are waste reduction, recycling, composting, and green purchasing. Students, faculty, and staff see the need for a sustainable future reflected in the practical decisions the school community makes. Some of these practices may be seen in:

- Cafeteria operation.
- Inclusion of students and custodial staff in energy efficiency training and initiatives.
- Transportation policies.
- Construction or renovation of school buildings.
- Design and maintenance of schoolyards.
- Use of paper and other products in the classroom.

Schools or school districts should not count on recycling to raise funds. Markets for recyclable products fluctuate and the current market rates will not make money for your school. Schools do gain financial benefit in avoided costs. Reduction in dumpster fees and energy cost savings associated with waste reduction and recycling are the major financial benefits of any school resource conservation program.

One of the most crucial issues that children face today is the quality of the world they will inherit. A school that both teaches and practices sustainable behavior offers children and the local community an important role model. Such a school provides students knowledge and skills that will help them better understand and respond to a rapidly changing world.

As human activities seem to take a higher toll on the environment, we need to recognize how our society, our economy, and our environment depend on each other. If we use up our resources too quickly, there will not be enough left to support future generations. Meeting our present needs and still leaving enough resources for future generations is the aim of sustainability.

Bringing environmental issues into our classrooms can be a challenge when working within basic education requirements. It takes dedication and support from all members of the school and the greater community. Your school can be part of this effort to teach these important principles to the leaders of tomorrow.

To review Washington State laws and executive directives related to sustainability, waste reduction, and recycling, please refer to “Appendix F – Laws and Directives.”

Terry Husseman Sustainable School Awards

The Terry Husseman Sustainable School Awards promote sustainability and reward school efforts to reduce waste and increase environmental curricula. The Department of Ecology (Ecology) wants to encourage schools to be role models in environmental stewardship for students and community members. Ecology distributes as much as $30,000 a year, with single awards ranging from $100 to $5,000. This awards program has evolved in pace with changing resource conservation policies and practices.

Ecology staff are available statewide to help schools locate assistance and resources for implementing sustainability, waste reduction and recycling programs.

All around the state, schools are finding ways to carry out their missions in a less wasteful manner. (See "Appendix B – Examples of Waste Reduction and Recycling.")

Award Categories

Sustainability is a situation in which we are "meeting the needs of the present without compromising the ability of future generations to meet their own needs." To successfully compete for an award, a school must exhibit policies and practices in line with this definition. Generally, the closer a school follows this definition, the greater its chances of winning an award. Awards are presented in three different categories and each category has a separate application form.

The Three Award Categories

Seed Award

This award gives money to start basic sustainability programs. Schools can apply for help to:

- Buy educational aids and equipment for sustainability programs (for example, recycling bins, signage, composting equipment).
- Start sustainable activities (for example, composting, IPM landscaping).
- Add sustainability lessons into the curriculum to help meet the goals established by the State of Washington Environmental Education Guidelines. http://www.k12.wa.us/EnvironmentSustainability/default.aspx

Sustainable School Program Award

This category recognizes a school's ongoing efforts to maintain and expand waste reduction, recycling, or sustainability programs.

Creative Environmental Curriculum Award

This category recognizes original curriculum that:

- Introduces students, teachers, staff, and administrators to the concepts of sustainability including its social, economic, and environmental relevance.
- Strives to inspire a sense of environmental stewardship in the students.

Developing an Award-Winning Program

Tips on Establishing a Sustainability Program

When you start a new program, start small. For example, to kick off a waste reduction and recycling program, begin with an assembly to explain the purpose of the program and how it will work. Ask for help from your local city or county solid waste division or a local recycling company. After you have recycled successfully for two or three months, add a new item to your program. Try adding yard debris or food waste composting, or both. Allow time for your basic program to operate smoothly before you expand.

- For detailed instructions on how to set up a sustainability program in your school, see "Appendix A – A Step-by-Step Guide to Developing a Sustainability Program in Your School." It provides a clear description and specific ideas.
- For ideas on techniques or activities your school can do, see "Appendix B – Examples of Waste Reduction and Recycling."
- To learn how to perform a waste audit and cost-benefit analysis, see "Appendix C – Waste Audits and Cost-Benefit Analysis." It provides step-by-step instructions and a sample cost-benefit analysis worksheet.

Tips on Getting a Seed Award

When applying for a Seed Award, clearly identify your program goals and your methods for reaching those goals. Because the budget you submit will determine the amount of the possible award, clearly identify the items you wish to buy for your program and their costs.

- Explain how the funds you request will help produce the desired results.
- Give a history on any previous efforts or attempts to plan or run a program.
- Describe any challenges or obstacles you face and identify any previous successes.
- Explain how you will ensure longevity of the program.
- Research your costs and be sure they are accurately reflected in your budget.
- Describe how you will measure success.

Tips on Getting a Sustainable School Program Award

When applying for a Sustainable School Program Award, demonstrate the extent to which your school practices sustainability. Show how your school gives students and staff chances to join in sustainability efforts. Give the history of your program, including challenges, obstacles, and successes. Explain how you measure success.

Tips on Getting a Creative Environmental Curriculum Award

When applying for a Creative Environmental Curriculum Award, demonstrate your innovation and creativity in curriculum design. Show that your curriculum meets all state requirements established by the Office of Superintendent for Public Instruction. The curriculum must:

- Educate participants on sustainability and provides methods/tools for implementing those elements.
- Be original work.
- Meet the four goals identified in the Environmental Education Guidelines for Washington Schools. http://www.k12.wa.us/CurriculumInstruct/ .
- Use environmental education as an integrating context for learning. (See the EIC Model™ developed by the State Education & Environment Roundtable, online at http://www.seer.org . They describe

their model as “a system of educational practices that interconnects ‘best practices’ in education into an instructional tapestry that improves student achievement by using local natural and community surroundings as a context for learning.”)

Appendix A

A Step-by-Step Guide to Developing a Sustainability Program in Your School

Following are steps you may choose to follow when establishing your school's sustainability program.

Steps in establishing your program

1. Form a sustainability or resource conservation committee to develop strategies and goals.
2. Designate a coordinator to oversee the program.
3. Conduct a waste audit to determine the needs of your program (see ***Appendix C***).
4. Research your market, contact/contract with local recyclers or haulers.
5. Design a step-by-step separation and collection system.
6. Provide resource conservation education and training for staff and students.
7. Implement recycling.
8. Monitor the ongoing program and make necessary revisions.
9. Re-launch the program with new incentives or contests.
10. These steps are described in further detail below.

Step 1. The committee

Form a sustainability or resource conservation committee to develop strategies and goals. Include representatives from administration, faculty, clerical staff, library, custodians, purchasing office, student body, and parent organizations. Input from all segments of the school community during the planning stages increases the likelihood of a successful sustainability program, even if it initially takes longer to come to agreement.

Duties of the Committee

The committee develops goals and plans the school sustainability program. Each phase or step should be carefully planned. A good program has the basic steps (listed above) in planning, implementing, operating, and maintaining the recycling efforts. After designing the program, the committee designates a program coordinator. In some schools a school administrator, a custodian, and a teacher work together as a coordinating team.

Goal Examples

- Develop and follow an environmentally preferable purchasing policy reflecting sustainability principles when reasonably cost-effective.
- Reduce the amount of energy (electricity, natural gas, gasoline) the school uses.
- Reduce the amount of waste the school produces.
- Reuse materials when safe and practical.
- Recycle as many materials as practical.
- Reduce the school's water use.
- Educate administrators, staff, and students in sustainability, waste reduction, reuse, recycling, and purchasing practices.
- Meet the requirements for recycling procurement established by RCW 43.19A.
- Voluntarily follow the guidance given to state agencies by the Governor's Executive Orders 02-03 and 05-01.

Step 2. Coordination

Designate a coordinator or coordinating team to oversee the program.

Coordination Duties

- Oversee the sustainability program.
- Act as liaison to all school groups.
- Monitor energy and water usage.
- Contact the local fire marshal regarding fire-code regulations (for recycling activity).
- Select vendors(s) and develop contract(s).
- Maintain contacts with the vendor(s).
- Establish timelines for implementing the program.
- Monitor implementation of each step of the program.
- Coordinate and schedule volunteers.
- Make regular progress reports to the resource conservation committee.

Step 3. The waste audit

Conduct a waste audit to determine a baseline for your school and to identify and prioritize activities for your program.

Typically, waste audits in schools indicate a rate from one-half pound of solid waste per student to about one pound per student per day. During the 180-day school year, each student produces between 90 and 180 pounds of solid waste. How much waste does your school produce in one year? Washington's goal of recycling 50 percent of our waste is a great challenge and opportunity for your school.

Step 4. Market research and hauler contracting

Research your market; contact and contract with local recyclers or haulers.

Once you have completed a waste audit or other waste stream research, contact recyclers and haulers in your area for recycling opportunities. Recyclers operate profit-making businesses, and different recyclers collect different materials, offer different prices, and provide different services. Negotiate with recyclers on the price they will pay for materials and what services they will provide.

Some schools do business with more than one recycler. They may send materials to two or three different recycling businesses, depending upon prices for recyclables, collection schedules, materials the recycler will take, distance to the recycler, equipment provided by the recycler, or other considerations.

Questions for Recyclers

- Which materials will you accept?
- Which materials will you pay for? How much?
- Which materials will you accept at no cost?
- What materials will you accept only for a fee? How much?
- How should materials be separated, collected, and stored in preparation for your service?
- If the school delivers the materials to you, what are your hours of service or other important considerations?

What Services Will the Recycler Provide? Will the Recycler:

- Provide containers?
- Distribute promotional materials?

- Help organize the program?
- Provide transportation of recyclables from the school? “Scheduled” service or “on call”?
- Monitor and report totals of materials being recycled and amount of money earned by the school?

Contract

Negotiate a contract with a vendor. The contract should be for the entire school year, if possible. Fluctuating markets and fuel cost increases are reasons for a contract. The year-round contract provides consistency of service. If you are establishing a new program and wish to add materials later in the school year, include this provision in the contract. To identify recyclers in your vicinity, check in the yellow pages of your local phone book, call the Ecology’s Recycling Information Line at 1-800-RECYCLE, or call the solid waste division of your local city or county works department.

Transportation options

Contract-Haul

Some recyclers and garbage haulers will transport your recyclables. The collector usually provides large outdoor bins or dumpsters for contract-hauling. Some collectors are willing to collect materials with profitable markets but won’t take other recyclable materials.

Self-Haul

Self-hauling is a commonly used option considering current market conditions. The school will need a van or pickup truck to haul the recyclables. Teachers, custodians, parents, or the local PTA are possible self-haulers. You can use money received from recyclable materials to help defray hauling expenses. Some recyclers take self-hauled materials that they won’t pick up from a customer’s site.

Other Transportation Options

Pickup by an existing interschool delivery system or municipal collection is available in some school districts. Information on municipal collection systems is available from the city solid waste division. Interschool delivery systems options are sometimes available within a school district. Contact the facilities department at your school district office. The PTA can provide vehicles and drivers for taking recyclables to markets.

Step 5. The collection plan

Design an easy-to-use separation and collection system to get your program started.

Classroom Paper

Though some recyclers take all recyclable classroom paper in one container as mixed paper, many ask that you sort classroom paper into two categories: white paper and mixed paper. If you do need to sort, separate high-grade white paper from mixed paper by type during paper collection. With the dual-bin system, place two small collection bins in each classroom. Suggested locations for the bins are by the classroom entrance or near the teacher’s desk (for monitoring purposes).

If source separation is the chosen method, one bin contains all white papers: white notebook paper, white ledger paper, and computer paper. (If enough computer paper is generated, you may wish to separate it from other white paper because some recyclers have a separate market for white computer paper.) The second bin contains mixed paper, such as colored ledger paper, construction paper, and butcher paper.

Coordinate with your recycler on which grades of paper they want separated. Strategically place signs listing the types of paper allowed in each bin or create a poster with examples of appropriate types of paper for each bin. Then prominently display the poster near the paper recycling bins.

Office Paper

Source-separation methods of paper collection often use desk-side dual bins or a small, desk-top container with two compartments, one for high-grade white paper and the other for mixed paper. Place dual compartments at each work station. Offices use a higher percentage of white ledger paper and computer paper than classrooms.

Clerical and administrative staff separate white ledger paper from mixed paper at their workstation. When a desktop container is full, staff can empty the paper into a central collection container themselves, or designated persons can collect paper daily from each workstation as well as each classroom. If you have newsprint, you could place three bins or compartments at appropriate workstations, or you could designate a special bin for newsprint in the faculty room or library. Paper can be collected once a day from workstations and classrooms and taken to central storage. Teachers, custodians, students, or PTA volunteers can collect.

Cardboard

Cardboard, a large portion of the school waste stream, is generated in kitchens, libraries, custodial workstations, administrative offices, laboratories, and classrooms. You can reuse cardboard boxes for storing recyclable items or school supplies.

You can also recycle it. Unless otherwise directed by your recycler, break down and flatten cardboard for storage and transportation to the recycler. Waxed cardboard and used pizza boxes are generally not acceptable, but confirm details with your recycler.

Library

In addition to white paper and mixed paper, the library generates newsprint, books, catalogues, and cardboard. Place a separate collection bin for newsprint in the library or faculty room or central storage area. **Schedule special collection days for books and catalogues as needed.**

Central Storage

Designate a central collection station and storage space, accessible, but away from traffic areas. It is helpful to place containers in the computer center, copy machine workroom, or other areas where large amounts of paper are used. Remember that paper collected from classrooms and staff workstations will also be stored at the central storage area.

Supply enough container space for the entire building for one day's supply of paper. Fire codes will not allow crumpled paper; therefore, paper must be stacked neatly in nonflammable containers. One option is to collect the paper at a central point, then empty the central containers daily in outside bins near the garbage dumpster. This provides easy access for the hauler, saves limited building space, and reduces fire hazards..

You may also store other recyclable materials such as aluminum cans or cardboard at the central collection site, if you have space.

Selection of Central Collection Station

- Design and locate the collection station in accordance with fire code regulations.
- Provide necessary weather and vandalism protection.
- Label containers clearly for each recyclable material.
- Locate your central collection center for convenient hauling.
- Design the system for possible expansion.

Step 6. Conservation education and training

Education about sustainability is vital to the success of your school program. All members of the school community—administrators, faculty, custodians, clerical staff, students, and parents—should learn the

importance of resource conservation. Concern for environmental issues, for waste reduction and recycling, and for lowering the costs of waste disposal in schools may provide motivation for school programs.

An introduction to natural resource demand and supply along with a measuring of individual ecological footprints will focus staff and students on the importance of resource conservation in the school. To measure individual footprints, use the quiz developed by the Earth Day Network and Redefining Progress as a part of their Ecological Footprint Campaign. To learn more about the campaign or to take the free quiz, visit http://www.earthday.net/footprint/index.asp.

Steps in Education Programs

- Faculty and staff training workshops
- Assembly program for entire school
- Classroom activities for students
- Student body organization or recycling club promotion
- Recycling information program presentation for the PTA

Teacher-Training Program

The Washington State Department of Ecology's Sustainability Web site contains information about some of the steps Ecology is taking to foster sustainable communities and natural resources within our state. You'll find information about the activities of the Sustainability Team, other sustainability-related projects Ecology is involved with, and additional resources.

The Washington State Department of Ecology's A-Way With Waste program offers an on-line curriculum guide for Washington State teachers and staff. The Internet address for this resource is http://www.ecy.wa.gov/programs/air/aawwaste/awwwhome.html . For further information, contact Sandi Newton at 360-407-6826 or by e-mail at snew461@ecy.wa.gov.

Many city and county solid waste offices have educational programs for students and teachers. Assemblies, lesson packets, brochures, and classroom presentations are all options. Contact your local government solid waste office for further details.

Assemblies

Assemblies are a frequent place to begin waste reduction and recycling programs in schools. Skits, plays, art contests, and videos have been successful at assembly programs. The recycling coordinator can work with teachers, parents, and students to present the program. Many local solid waste agencies or private citizens design and present assemblies.

Classroom Activities

Ecology's A-Way With Waste curriculum has lesson plans for grades K-12. Action-oriented activities for waste reduction, recycling, waste and water, and litter control are included for all classroom disciplines. City and county solid waste offices also have sample lesson plan packets for appropriate grade levels.

ASB or Student Recycling Clubs

In some schools, particularly at the junior and senior high school level, students may form a recycling club. Other organizations such as Future Business Leaders of America (FBLA) or FFA can collect recyclable materials, monitor the ongoing paper recycling program, record the data on computer disk, and coordinate self-hauling.

PTA Outreach

An outreach program presentation by staff and/or students to the PTA can arouse PTA interest and support for the program. Some schools have community drop-off sites or special collection days supervised by PTA members for recycling aluminum and newspapers.

Community Outreach Programs

Schools throughout Washington have community outreach recycling programs. Some have fund-raising activities such as newspaper drives, aluminum collection days, and Earth Day activities. Under current market conditions, only aluminum is a reliable money-maker for your club or organization. However, as an educational opportunity for environmental awareness, or as a service to the community, community drop-off sites at the school and special collections are frequently organized by student clubs or PTA groups.

Schools can ask businesses to "adopt a school" or a classroom by providing collection bins or other materials needed to operate the school recycling program. The local PTA can help with hauling materials or promoting the program by making presentations demonstrating the successes of the school's waste reduction and recycling program. Students can educate the community through poster contests, school open house, or presentations at PTA meetings.

Step 7. Implement recycling

This step explains some of the tasks required in designing and implementing a recycling plan.

Design and Implementation

- Develop collection plan.
- Obtain fire marshal approval.
- Prepare training materials.
- Train staff and students.
- Have an assembly to promote the program.
- Coordinate with the PTA.
- Place containers.
- Begin recycling.
- Monitor the program.
- Make appropriate changes.
- Re-launch your program with new incentives.

A successful recycling program takes careful planning. Once you have conducted a waste audit to determine what is recyclable in your school's waste stream, you can design your program. If you cannot do a waste audit, review the following information from other school waste samples.

Sample Waste Stream

What materials found in the waste stream are recyclable? By weight, approximately 50 percent of the school solid waste stream consists of recyclable materials. Paper, the largest waste stream component by weight, comprises between 30 and 40 percent of the typical school waste stream. For further information on typical school waste stream items, see the "Cost-Benefit Analysis and Waste Audit" in Appendix C. Listed below are items recycled in Washington State schools in the recent years.

- White ledger paper
- Mixed paper
- Newsprint
- Paper bags
- Phone books
- Steel (tinned) cans
- Glass
- Food wastes
- HDPE plastic
- Laboratory chemicals
- Motor oil
- Shoes
- Clothing
- Computer paper
- Cardboard
- Construction paper
- Books
- Catalogues
- Aluminum
- Other metals
- Batteries
- PET plastic
- Polystyrene
- LDPE plastic
- Paint shop residues
- Printer ribbons
- Toner cartridges
- Wood products
- Milk cartons

Some items listed above don't have markets in all parts of the state. For example, certain paper and plastic items have limited markets.

Paper Recycling

Because paper comprises the largest percentage of the waste stream, methods for recycling paper are given here as a separate section.

- Separate paper from other waste, and collect paper in designated recycling containers.
- Collect paper daily.
- Deposit accumulated paper in central containers.
- Arrange for pickup (or delivery) of recovered paper by (or to) recycler/hauler.

Consult with your local fire marshal when developing any portion of the collection and storage system. Local fire codes may prohibit the storage of paper in open containers. Other codes may require fire resistance in storage containers. Paper should be neatly stacked or bundled, never crumpled up. Some schools store their collected paper outside the school building in bins to save space in the school and to reduce the risk of a fire. Have your local fire marshal walk through your building with you before you initiate the program, to get firsthand advice on your storage and central collection system or other fire code concerns that you may need to address.

Step 8. Monitoring the ongoing program

Monitor the ongoing program and make necessary revisions. Some ways to monitor the effectiveness of your program include:

- Review data on savings realized.
- Review data amounts recycled or disposed of.
- Survey program participants to obtain feedback on awareness of program, level of participation, and recommendations for improvement.

Step 9. Re-launch the program

After making improvements or adjustments to your program, consider re-launching it with new incentives or contests. For additional ideas for re-launching your program, see Step 6, Conservation education and training, above.

Appendix B

Examples of Waste Reduction and Recycling

Waste reduction

The term "waste reduction" describes a set of actions that result in less waste. It includes making purchases and following procedures that bring you what you need rather than leave you with excess that you might have to throw away or recycle. Waste reduction also means using less toxic materials and choosing products produced with less pollution. Reusing products, prolonging a product's life, or providing an alternative use for a product are all good ways to reduce waste. Buying durable goods and repairing goods are also important to reducing waste.

Environmentally Preferable Purchasing

Environmentally preferable purchasing (EPP) is the purchasing of products or services that have less negative effect on human health and the environment when compared with competing products or services that serve the same purpose. This approach to purchasing considers impacts of a product and packaging throughout the entire life cycle, including final disposition. When possible, buy products whose manufacturers have demonstrated the same considerations. If distributors you buy from don't offer such products, tell them what you'd like to buy.

Any school can adopt waste reduction practices. Purchasing provides many opportunities. Does your school purchase goods with less packaging? Do you buy products that created a lot of pollution when they were made? Do you use nontoxic or least-risk chemicals? In laboratory experiments, do you conduct micro-experiments that create less waste? An inventory of purchases and a study of methods of your school's operation will reveal potential areas for waste reduction in administration, classroom, kitchen, and custodial services.

Pre-purchase Review

When planning the purchase of materials, consider the following:

- Is this item or quantity a necessary purchase?
- Is there a more durable alternative for this item?
- Is a less toxic substitute available?
- Can this item have an adaptive reuse after it has been used as first intended?
- How will you dispose of this item?

Waste Reduction Resources

You can solicit waste reduction ideas from other schools. Establish a school district exchange of information. Find out what methods of waste reduction are effective in schools of similar size. Also, remember to research market availability for the materials you plan to collect and recycle. The solid waste division of your local city or county works department should have waste reduction information and education materials for staff, students, and parents.

Waste reduction practices that have been used in Washington schools

Between 1992 and the present, the Washington State Department of Ecology has found the following waste reduction practices actually in use in schools.

Classrooms and Administrative Offices

- Electronic mail in place of memos
- Half-sheet for memos (if paper is really necessary)
- Memos routed instead of copied for everyone
- Quarter-sheet for event announcements/reminders
- Purchasing refillable pens and cartridges
- Purchasing refillable mechanical pencils
- Purchasing copy machine which copies on both sides of the paper
- Monitor number of photocopies made
- Use of electronic mail rather than fax machines
- Using computer (rather than paper copies) to review drafts of articles for journalism class
- Overhead mirror in cooking class demonstrations to reduce the amount of supplies needed
- Reuse of envelopes
- Reducing junk mail by student writing campaign
- Lessons and student drills on blackboards or whiteboards instead of paper (a time-honored technique!)
- Old socks as erasers for blackboards or whiteboards
- Using a computer with a projector, saving both paper and transparencies
- Verbal responses for evaluation instead of paper and pencil
- No use of consumable workbooks
- Back-to-back work sheets
- Making handout paper copies for the exact student count
- Waste paper and scraps reused in math and art classes
- Developing cooperative learning groups to reduce purchases
- Library reissuing student copies of research materials
- Older periodicals circulated to classrooms for reuse
- Discarded envelopes used for scratch paper
- Colored butcher paper reused
- A crayon-exchange box
- Scratch pads made from recovered paper
- Cardboard boxes reused for storage
- Reusing plastic shopping bags to store recyclables
- Newspapers shared with second and third families
- Students writing on both sides of paper
- Reuse of old file folders for art projects
- Reuse of cardboard and wood as sets for school plays
- A school “paperless” day
- Copy-paper ream wrappers distributed for textbook book covers
- Paper sacks used as book covers
- Giving certificates for using the same lunch bag five days
- Reusing wood and plastic scraps in technology class
- Double-sided copies for handouts and work sheets
- Waste reduction list placed in classroom
- Demonstrating waste reduction purchasing in home and family-life classes
- Articles in school paper on how to reduce waste
- Laminated master sheets for teacher’s reuse

Custodial Services

- Plastic liners no longer used in garbage cans
- Electric hand dryers or washable linen cloth to replace paper towels
- Reduce frequency of refilling paper towel dispensers to discourage use
- Bulk purchasing of cleaning solutions
- Diapers reused as cleaning rags
- Reuse of food buckets for mopping and cleaning
- Replacing toxic cleaners with less toxic or nontoxic alternatives
- Participating in chemicals-exchange program
- Use of least risk and nontoxic yard and garden chemicals
- Use of integrated pest management techniques
- Eliminating classroom waste basket liners
- Reusing plastic liners in garbage cans
- Reusable plastic recycle bins
- Salvaging wood from construction projects for reuse
- Installing reduced-flow water conservation nozzles for sinks and shower heads
- Installing waterless urinals in appropriate restrooms

Food Services

- Ceramic cups instead of disposables
- Purchase of squeezable, reusable condiment bottles
- Reusable aluminum and hard plastic trays for hot lunches
- Replacement of disposable plastic utensils with metal silverware
- Monitoring lunch room disposal to save reusable items
- Egg cartons and plastic jugs used to store supplies
- Five-gallon plastic containers reused as waste baskets
- Purchase of food products in bulk to reduce packaging
- A "garbageless" lunch by using reusable containers
- A kitchen steam boiler that reduces cooking time and energy use
- Daily collection and composting of food waste on site to be used by biology and horticulture classes

Miscellaneous

- Exchange table for "naturally packaged" foods
- Setting up a completely organic garden
- Having a "no plastic" school picnic
- Thrift store for exchange of reusable items
- School tables, chairs, and desks refurbished and repaired
- Milk cartons used as planter cups
- Cloth towels (not paper) used for cleanup in science room
- Bottle caps used for counting activities
- Environmental pledge signed by students to reduce waste
- Saving and reusing decorations from parties and dances
- Automatic on-off motion sensor lights
- Clothing drive for sharing with other families
- Reusable materials found in recycle bins sorted and reused
- End-of-the-year exchange of reusable pads, pens, etc.

Procurement

- Purchase of solar-powered calculators
- Buying recycled products when feasible (generally, manufacturing products from recycled raw material uses less energy and creates less waste)
- Obtaining rechargeable batteries and chargers.
- Implementing a procurement policy that strengthens awareness of waste reduction
- Maintaining a "reusable bin" in each room.
- Purchase of energy-saving fluorescent lamps

Recycling

Recycling is separating recoverable materials from the waste stream and then reprocessing the materials into new products. Recycling is often the most visible means of resource conservation in schools. Over the past 15 or 20 years, recycling has increasingly become part of our daily lives. Recycling efforts in Washington schools have kept pace with those changes.

Why recycle? Recycling saves energy, conserves resources, reduces disposal costs, preserves landfill space, and helps the environment. Does recycling make money? Yes, recycling aluminum and certain other materials can be a profit-making enterprise during favorable market conditions. Because of fluctuating market prices, recycling might not serve well as a primary fund-raiser for your class or club. However, a comprehensive waste reduction and recycling plan may save school district money in avoided costs for garbage disposal.

How does recycling work? It may include source separation and collection of materials, monitoring and recording totals, preparation of recyclables for transport, or transporting the materials to the recycler. It may include market research and a change in purchasing practices for your school. If your waste reduction efforts can't eliminate a purchase, can this necessary purchase be a recycled or recyclable material?

Composting

Composting is a biological process that stabilizes organic matter for use in soil enrichment. Compostable items include yard and garden wastes, lawn clippings, tree and shrub limbs, and food wastes. For specific methods for each type of composting, contact the solid waste division of your local city or county works office, or contact the Solid Waste and Financial Assistance Program of the Washington State Department of Ecology at 360-407-6900.

Types of Composting

- Yard and garden waste, greenhouse trimmings, lawn clippings, and tree and shrub limbs can be placed in an outdoor compost pile. The composted product is a good soil amendment.
- Worm bins are used to compost food wastes. Fruits and vegetables are recommended. Red worms (Eisenia Foetida) are the best composters. Worm bin compost makes excellent fertilizer for lawns, gardens, or houseplants.

Waste Reduction and Recycling in Laboratories

Following are some common waste reduction and recycling methods that Washington schools use in their laboratories.

Science laboratories

Waste reduction and recycling can work in science laboratories if you plan and design your experiments with waste reduction and recycling in mind.

Waste reduction in experiments

Micro-scale chemistry uses scaled-down versions of laboratory experiments. Microchemistry reduces:

- The amount of chemicals needed for an experiment
- The amount of storage space required for chemicals
- The amount of waste produced
- The amount of waste for disposal
- The costs of acquisition, storage, and disposal of chemicals
- Include in your laboratory procedure a step called neutralization, adding a compound which treats the hazardous material and renders it into a non-hazardous state.

Waste exchanges

Another way to reduce waste is through chemical waste exchanges. The Industrial Materials Exchange (IMEX) in Seattle lists items for exchange with other interested organizations. You can contact them at (206) 263-8465 or online at http://www.lhwmp.org/home/IMEX/index.aspx.

Disposal

Science lab instructors should conduct an annual inventory of materials and make a complete list of excess substances targeted for disposal. Specific federal, state, and local regulations may apply when you dispose of excess or unwanted chemicals. **Before using any disposal option, review your selected options with local regulatory health officials.**

A **license is required** for you to conduct disposal. If you are licensed and approved, be sure to practice your disposal activity on a micro-sample of the targeted substance before you handle the larger or macro volume.

Another option is to hire a commercial firm to remove the hazardous chemicals. This option is often very expensive. Be sure to obtain references from the disposal firm. Contact the references for verification of reliability of service provided before signing any contract.

Chemical disposal information sources

- Washington State Superintendent of Public Instruction office
- Science Program Coordinator
- Local college or university chemistry department
- Other local high schools
- City or county solid and hazardous waste disposal section
- Washington State Department of Ecology's Hazardous Waste and Toxic Reduction Program
- Local office of the American Chemical Society
- Chemical Waste Exchanges

Waste Reduction and Recycling in Nontraditional Settings

Following are some examples of possible waste reduction and recycling methods that Washington schools practice in specialized classroom settings like home economics, shop classes, and agriculture programs.

Home economics possibilities

Waste reduction

- Preparing scaled-down recipes
- Using both sides of paper
- Use of non-hazardous oven cleaners
- Use of nontoxic dishwashing detergent
- Purchasing biodegradable products
- Reusing fabric
- Reusable metal silverware
- Reusable plates, cups, and dishes
- Weighing food waste
- Discussions on where food comes from, what resources are used to grow and transport it, etc.

Recycling

- Paper
- Clothing and fabrics
- Milk cartons
- Plastic milk and fruit juice jugs

Composting

- Worm bins for food scraps

Auto shop possibilities

Waste reduction

- Using least risk or nontoxic cleaners and solvents
- Purchasing products in only the quantity needed
- Sharing excess quantities of products with other auto shops
- Reusing tires for playground or athletic equipment
- Buying re-refined motor oil
- Recycling possibilities
- Tires
- Used motor oil and transmission fluid
- Antifreeze
- Auto parts
- Copper and other metals
- Batteries
- CFCs from vehicle air conditioners

Welding and metal shop possibilities

Waste reduction
- Reusing scrap metals
- Collecting and reusing metals from businesses
- Designing and using scaled-down projects

Recycling
- Metals
- Machine and cutting oil

Wood shop possibilities

Waste reduction
- Conserving wood, paint, and stain products
- Using sawdust or wood chips in agriculture programs as bedding for livestock

Recycling
- Clean wood products
- Paper
- Paint and stains

Art studio possibilities

Waste reduction
- Using scrap paper for sketching
- Reusing modeling clay
- Reusing metal or wood scrap materials for projects
- Using nontoxic paints and solvents

Recycling
- Paper
- Paint
- Metals
- Art accessories

Agriculture (FFA) program possibilities

Waste reduction
- Conserving materials by inventory and management
- Using sawdust or wood chips as bedding for livestock
- Using least risk or nontoxic materials and chemicals

Recycling
- Paint products
- Solvents

Composting
- Animal dung for fertilizer
- Plants from greenhouse projects

Gymnasium, auditorium, stadium possibilities

Waste reduction
- Durable, reusable food service utensils
- Recyclable paper products
- Conservative use of solvents and paints
- Print and distribution of a fixed number of programs

Recycling
- Paper
- Plastic
- Aluminum

Waste Reduction and Recycling in Building and Facility Services

Following are some examples of possible waste reduction and recycling methods that Washington schools practice in facilities and services departments including custodial services, kitchen, cafeteria, and the vehicle maintenance garage.

Custodial services possibilities

Waste reduction
- Inventory and management of materials
- Using nontoxic strippers, thinners, paints, and solvents
- Repairing and reusing tools
- Purchasing only necessary annual amounts of materials
- Waste exchanges
- Using nontoxic or less toxic cleansers

Recycling
- Wood products
- Paint
- Cleansers
- Oil

Composting
- Yard and lawn clippings
- Tree limbs

Cafeteria/kitchen possibilities

Waste reduction
- Purchasing reusable utensils and dishes
- Purchasing products in recyclable containers
- Providing more than one option for meals
- Keeping accurate count of daily lunches
- Inventory and update of kitchen materials
- Providing reusable cloth towels
- Purchasing items with necessary packaging only
- Discussing and determining where food comes from, what resources were used, transportation, etc.

Recycling
- Glass containers
- Cardboard
- Steel cans
- Aluminum
- PET plastic
- HDPE plastic
- Polystyrene
- Paper
-

Composting
- Food waste
- Worm bins
- Fruit and vegetable waste can be composted in worm bins. For details on composting, call the solid waste division of your local city or county works office.
- Swine Feeding Disposal
- Swine feeding is another option for food waste. A license is required to operate a swine-feeding program. Licensing regulations for feeding food waste to swine are outlined in RCW 16.36.105. For further information, call the Washington State Department of Agriculture at 360-902-2025.

Maintenance garage possibilities

Waste reduction
- Inventory, management, and purchasing procedures
- Reuse auto parts
- Reuse tires
- Reuse fluids and motor oil when possible

Recycling
- Motor oil
- Antifreeze
- Metals
- Tires

Product Exchange Programs

Advanced programs sometimes operate exchange programs, thrift stores, or community outreach projects for recycling. These programs facilitate the reuse of goods and materials that would otherwise find their way into the landfill. The local PTA or a student club can organize and operate this kind of recycling outreach program.

Comprehensive waste audits (see ***Appendix C***) will reveal new areas for waste reduction and recycling. For example, the purchasing agent for your district may buy recyclable items or recycled items for the school. Try to include in your purchases recycled materials, such as plastic, that need stronger markets. In addition,

you may substitute reusable or durable items in place of nonrecyclable or less durable items. Now could be the time to add difficult-to-recycle or compostable items to your recycling list. Examples are plastics, food items for worm bin composting or swine feeding, compostable yard and garden items, and used motor oil from the school bus maintenance division.

Appendix C

Waste Audits and Cost-Benefit Analysis

Following are examples of steps involved in conducting a waste audit and a cost-benefit analysis.

Waste Audits

Purpose

An important step in a waste reduction and recycling program is the "waste audit." The waste audit measures the kinds of materials and weight of materials found in the waste stream. When you design your program, the audit provides valuable information regarding which items to target for waste reduction and recycling.

If your waste audit reveals non-recyclable items or difficult-to-recycle items in the waste stream, see if alternative products that are easily recyclable can be purchased in place of these products that are more difficult to recycle. The audit may also identify items in the waste stream that can be reused, removing them from the disposal path.

For those wishing to complete a waste audit, you may obtain a sample audit from the Ecology School Awards Coordinator. Also, city and county solid waste staff have conducted school waste audits in many areas of Washington and may be available for assistance. A list of city and county solid waste contacts are available on Ecology's website at http://www.ecy.wa.gov/programs/swfa/contact/recyclelinks.html.

An alternative to the comprehensive waste audit is a "sample site audit." To perform a sample audit, select several key rooms in your school. Select samples from 25 percent of the classroom garbage cans, the kitchen garbage can, the administration office, the teacher workroom, or the photocopy room. This will give you a representative sample of the contents of the school's waste stream. You will need a scale to weigh the samples, and you should wear protective clothing and gloves.

The best time to conduct the sample audit is before you begin your waste reduction and recycling program, or very early in the program. If you repeat the sample audit in the same selected areas three months later, you can measure the improvements made by your program.

Statistics on the amount of waste produced by each student are available from samples taken at schools. For example, in a waste audit of six schools in 1990, each junior high and high school student produced about .6 pounds of solid waste per school day.

School Waste Audit Form

School name: _____ Date: _____

People involved in audit: _____

RECYCLABLES	Weight (pounds)	Volume (gallons)	% weight of total	% volume of total
Mixed paper, newspaper, magazines, cardboard				
Aluminum and tin (cans, foil)				
Glass jars and bottles				
Plastic bottles				
Compostable food waste				
Other*				
NON-RECYCLABLES (TRASH)				
Plastic (baggies, wrappers, straws, sporks, etc.)				
Paper (napkins, paper towels, contaminated)				
Non-compostable food waste				
Other misc. items* list:				
TOTALS				

Where the waste came from: (circle one)

cafeteria office classrooms staff room

WASTE AUDIT TIPS:

Don't sort waste from the bathrooms or health room

Use gloves Dump garbage bags out on a plastic tarp and sort in to buckets (easy to weigh and estimate volume - subtract the weight of the bucket)

After sorting, recycle the items that can be recycled!

Cost-Benefit Analysis

Economics of Waste Reduction and Recycling

Although recycling aluminum currently makes money, recycling in schools should not be regarded as a fund-raising effort. Markets for paper or other products fluctuate with supply and demand. Most grades of paper and many other recyclable materials at current market rates will not make money for your school.

The greatest savings for the school or for the school district are in avoided costs. Reduction in dumpster fees and energy cost savings associated with waste reduction and recycling are the major financial benefits of any school resource conservation program. By selective purchasing, waste reduction practices, recycling, and composting, schools can decrease the number of dumpsters being filled per month by as much as 50 percent.

How much money can you save? Cost of disposal varies from one vendor to another. Careful monitoring of the reduction in dumpster fees per month, compared with the same period in the previous year, will provide waste reduction and recycling cost savings information. In addition, disposal costs may increase because of rising landfill fees. Any reduction in school waste disposal saves the amount of increased fees each year.

Sample Cost-Benefit Analysis

Basic cost-benefit information may be obtained from the work sheet on the next page. For more information, contact the Ecology School Awards Coordinator, Alissa Ferrell, at 360-407-6707, or search the internet for a variety of resources.

The cost-benefit analysis will help you determine:

- Existing waste stream content and volume.
- Recycling potential and any revenue and/or cost avoidance resulting from recycling.
- Potential waste reduction resulting from recycling.
- Initial costs of setting up a recycling program in your school.
- Information for formulating an expenditure payback schedule.

Cost-Benefit Analysis Work Sheet

1. Current solid waste disposal costs	$	/month
	$	/year
	$	/cubic yard
2. Estimate volume that could be diverted from the waste stream.	$	/cubic yards/year
3. Amount saved through reduced disposal costs. Disposal fee minus (cubic yards of recyclables x cost/cubic yard) =	$	/year
4. Revenue generated by selling recyclables.	$	/year
5. Amount saved through waste reduction activities (this includes ordering less paper, purchasing fewer disposables, etc.).	$	/year
6. Potential cost of implementing a waste reduction and recycling program, including investments in recycling equipment and durable goods.	$	/year
7. Collection of recyclables.	$	/year
8. Labor costs (# of employees x # hrs/wk x wage).	$	/year
Recycling coordinator	$	/year
Supporting staff	$	/year
9. Added cost of purchasing recycled products (e.g., recycled paper).	$	
10. Financial benefit of a waste reduction/recycling program (#3 + #4 + #5)	$	
11. Financial cost of a waste reduction/recycling program (#6 + #7 + #8 + #9).	$	
12. Benefit/cost of a waste reduction/recycling program. (#10-#11)	$	

Appendix D

Technical Assistance Tools/Programs

The following web sites and contacts may be beneficial to your school as it develops and implements its sustainability program.

Outdoor Environment/Grounds Maintenance

Washington State Clean School Bus Program – Information on cleaner school buses,

http://www.ecy.wa.gov/programs/air/cars/diesel_exhaust_information.htm

King County Metro Employer Commute Services Office – 206-263-4575,
http://www.kingcounty.gov/employees/Transportation.aspx

Reduction of Fertilizers/Pesticides/Water for the Grounds

Washington Toxics Coalition – Model Least-Toxic IPM Policy for school districts,
http://www.watoxics.org/files/lesson-in-prevention.pdf

Environmental Protection Agency – IPM for Schools, 250-page notebook on how to practice IPM. Available on-line at http://www.epa.gov/pesticides/kids/

Promoting the Outdoors as a Learning Environment

The Grant Exchange is a clearinghouse of grant and technical assistance programs offered by the King County Department of Natural Resources and Parks with the goals of protecting and enhancing the environment: http://www.kingcounty.gov/environment/grants-and-awards/grant-exchange.aspx.

Indoor Environment/Air Quality

Environmental Protection Agency – Indoor Air Quality Tools for Schools, Comprehensive information on indoor air quality topics for schools, http://www.epa.gov/iaq/ia-intro.html

Environmental Education Resources and Clearinghouses

Washington State Education for Environment and Sustainability program – A listing of available resource materials in curriculum alignment and integration, professional development, and other areas.
http://www.k12.wa.us/EnvironmentSustainability/default.aspx

E3 Washington – An environmental education clearinghouse for designed for educators, students, leaders and members of the general public in Washington State. Learn about the E3 Washington initiative to create a System of Education for Sustainable Communities. Search the network directory to find projects in your region and stay in touch with the latest in environmental education.
http://www.e3washington.org/

EE-Link – The mission of EE-Link is to spread information and ideas that will help educators explore the environment and investigate current issues with students. This site is a good resource for both teachers and people who support K-12 environmental education, such as media specialists, in-service providers, nature center staff, and curriculum developers. EE-Link is a project of the National Consortium for Environmental Education and Training. http://eelink.net/pages/EE-Link+Introduction

EnviroLink Network – The EnviroLink Network is a non-profit organization, which has been providing access to thousands of online environmental resources since 1991. http://www.envirolink.org/

NAAEE – North American Association for Environmental Education is a network of professionals and students working in the field of environmental education throughout North America and in over 55 countries around the world. NAAEE uniquely combines and integrates the perspectives of environmental interest groups and organizations and takes a cooperative, non-confrontational approach to promoting education about environmental issues. http://www.naaee.org/

NEEAP – The National Environmental Education Advancement Project, located at the University of Wisconsin-Stevens Point, is a national organization, which aids state and local environmental education leaders in promoting their environment education efforts and develops informational items on building state capacities for environmental education. http://www.uwsp.edu/cnr/neeap/

SEER – The State Education and Environment Roundtable is working to improve learning by incorporating environmental curricula into K-12 education. Twelve state departments of education are already active participants in the Roundtable. A major part of their work relates to gathering and disseminating research about systemic approaches to incorporating environmental education into education reform. http://www.seer.org/

Energy Conservation

Puget Sound Energy, Energy Efficiency Services – Site Inspections, Audits, Grants for increasing energy efficiency in your gas or electric heating system, 1-800-225-5733. http://www.pse.com/solutions/forbusiness/pages/efficiencyComPrograms.aspx

Washington State University Cooperative Extension Energy Program: http://www.energy.wsu.edu/ Also see their Energy Efficiency Measures and Ideas Web site: http://www.energyideas.org/

Green Schools Program of the Alliance to Save Energy – Combines energy efficiency management and building retrofit intervention with student involvement. Software program to track energy use included. 202-530-2215. http://ase.org/programs/green-schools-program

EnergyStar for Schools – U.S. Environmental Protection Agency Program. Curriculum, software and recognition for schools that have worked to save energy. http://www.energystar.gov/index.cfm?c=k12_schools.bus_schoolsk12

U. S. Department of Energy – Office of Energy Efficiency and Renewable Energy. Offers many ideas for saving energy in schools, which reaps special benefits, since it not only increases student comfort and performance, but it also saves school districts money, allowing them to channel more resources toward education. http://www.eere.energy.gov/

Curriculum

The Institute for Global Environmental Strategies has a collection of lessons on the potential consequences of climate variability and change available for free and listed on the web at http://www.strategies.org/index.aspx

Oregon Green Schools Association – Assessment tools for students to perform audits on energy, water and materials use in the school. Comprehensive set of questions in each area. http://www.oregongreenschools.org/tools.cfm

Water Education for Teachers – The goal of Project WET is to facilitate and promote awareness, appreciation, knowledge, and stewardship of water resources through the development and dissemination of classroom-ready teaching aids and through the establishment of state and internationally sponsored Project WET programs. http://www.projectwet.org/

Environmental Protection Agency – Environmental Education Center. Curriculum resources, activities and grants in water conservation. http://www.epa.gov/teachers/

Student Involvement

Washington Green Schools is a voluntary, web-based program your school can use to reduce its environmental and carbon footprint. This program provides resources and tools to involve your school community in assessing the current status of your campus and taking action. http://www.wagreenschools.org/

Watt Watchers of Texas. This program enlists students to look for energy waste in their schools by patrolling the hallways looking for empty classrooms with the lights on. The students turn out the lights and leave a reminder "ticket" for the teacher. Students can also close exterior doors, report stuck flush valves, implement power management in computers, and more. Full information on the program and sample forms can be downloaded from http://wattwatchers.org/

Appendix E

Example of Sustainable School Program

Komachin Middle School, Lacey, Washington

Using a Learn and Serve grant from Office of Superintendent of Public Instruction, Komachin Middle School is creating and modeling a more sustainable school through activities such as creating an outdoor garden, installing storm water filtration system, and developing a comprehensive recycling program. This initiative is an effort to take their school wide theme of "Sustainable Communities" and value of service to another level.

Komachin's "sustainable school" project has been dovetailed to their ongoing "Sustainable Communities" biannual integrated project. Komachin defines a sustainable community by the following indicators:

- Preserves the biodiversity of our natural environment.
- Reduces resource consumption and recycles waste.
- Involves participation.
- Encourages social harmony.
- Promotes health and wellness.
- Includes basic needs met.

Komachin's "school sustainability" goal is to provide hands-on laboratory practice and modeling of sustainable practices in the content of science under the umbrella of their six indicators.

1. Resource consumption: waste reduction, reuse, and recycling; water recycling (rain barrels/storm drain pond).
2. Biomass recycling (composting).
3. Biodiversity: habitat restoration (pond, off-site riparian restoration, butterfly garden), native plant propagation, and native plant garden.
4. Basic needs met: organic vegetable gardening.
5. Social harmony: opportunities for students to work together to solve problems to directly benefit their school.
6. Participation: provide opportunities for students to improve their school, provide opportunities for community partnerships with school. The nature of the relationship with community moves from funder or critiquer to true involvement and partnership.
7. Health and wellness: provide opportunities for students to engage in physical work during the school day, model healthy food choices.

Rather than aiming to become a self-sustaining school in terms of resource consumption and budget, Komachin has adopted the goal of modeling environmental best practices. It is realistic for the school to save money on resource consumption and to that end; they and their district are exploring incentives for saving money. Komachin realizes that success in actualizing their sustainability vision depends on student participation and enthusiasm.

Appendix F

Sample School District Sustainability Policy

School districts and individual schools have developed policies for implementation of waste reduction and recycling programs, including procurement issues. In some school districts, these efforts are part of a more complete resource conservation or sustainability program. The sample School District Sustainability Policy contains provisions for buying recycled items.

Policy Components

Mission Statement:

The _____ School District will develop and implement sustainability principles and practices throughout the school district. The _____ School District will operate a sustainability program that includes waste reduction, reuse, recycling, procurement practices, resource conservation, and sustainability education for students and staff.

Goals:

- ☐ Develop and enact an environmentally preferable purchasing policy reflecting sustainability principles when it is reasonably cost effective.
- ☐ Reduce the amount of waste generated by schools.
- ☐ Reuse materials when safe and practical.
- ☐ Recycle as many materials as practical.
- ☐ Educate administrators, staff, and students in sustainability principles, waste reduction, reuse, recycling, and purchasing practices.
- ☐ Meet the requirements for recycling procurement established by RCW 43.19A.

Objectives:

- ☐ Protect our environment.
- ☐ Reduce pollution.
- ☐ Reduce waste disposal costs.
- ☐ Save landfill space.
- ☐ Increase environmental awareness.
- ☐ Save energy.
- ☐ Provide students with modeling and tools for future use in creating sustainable environments.

Specifications: District

- ☐ Designate a procurement officer to serve as primary contact with the Department of General Administration to respond to requests for information.*
- ☐ Review and revise procurement policies and specifications to ensure that they do not exclude environmentally preferable products and services.
- ☐ Evaluate hazardous chemicals (cleaning, classroom, and science laboratory) and replace with safer alternatives.
- ☐ Form a district sustainability team to develop a comprehensive sustainability program.
- ☐ Implement school district sustainability program.
- ☐ Establish a monitoring process for costs, savings, and materials purchased and recycled.
- ☐ Coordinate efforts with each school in the district and other school districts when appropriate.

**Required by State law*

Specifications: School

- ☐ Recycle all paper products when economically and technologically possible including, but not limited to, white paper, computer paper, colored paper, cardboard, and mixed paper.
- ☐ Recycle aluminum and other metal.
- ☐ Recycle glass and plastic food and beverage containers, where possible.
- ☐ Recycle or compost kitchen wastes when feasible.
- ☐ Use least risk alternatives in laboratory experiments and custodial operations.
- ☐ Develop sustainability strategies for transportation operations.
- ☐ Monitor purchasing practices and conserve materials for classroom consumption when possible.
- ☐ Educate all administrators, teachers, staff, and students in sustainability principles.
- ☐ Keep records of costs, savings, and amounts of resources conserved, reduction in waste accomplished, materials recycled, and environmentally preferable purchases made.

Additional benefits:

- ☐ Develop a model sustainability program that will be transferable to other school districts.
- ☐ Reduce or eliminate non-school waste dumping at the _____ School District.
- ☐ Seek out opportunities for new and innovative methods of contributing to a sustainable school and community.
- ☐ Set an example for other major organizations in _____County.

Other Resources

For a sample resource conservation management resolution for school boards, visit the Department of General Administration's website http://www.ga.wa.gov/Sustainability/index.html. Also, the Washington State School Directors' Association (WSSDA) offers assistance with policy development to schools throughout the state, http://www.wssda.org.

Appendix G

Laws and Directives

The Washington Administrative Code establishes environmental education as an interdisciplinary instructional requirement in Washington State schools in grades K-12. "Pursuant to RCW 28A.230.020 instruction about conservation, natural resources, and the environment shall be provided at all grade levels in an interdisciplinary manner through science, the social studies, the humanities, and other appropriate areas with an emphasis on solving the problems of human adaptation to the environment." (WAC 180-50-115)

Environmental Education Guidelines for Washington Schools, published by the Superintendent of Public Instruction in July 2000, offers a wealth of relevant advice. It is available on-line at http://www.k12.wa.us/EnvironmentSustainability/default.aspx.

In 1989 the Washington State Legislature passed into law ESHB 1671, the "Waste Not Washington" Act. This bill, largely incorporated into RCW 70.95, included many provisions for handling and disposal of solid waste, established solid waste management priorities, targeted recycling rates in Washington State, and required development of K-12 school waste reduction and recycling programs. In 2008, this law was revised to include public and private schools (RCW 70.95C.120).

Washington's "Buy-Recycled Law" (RCW 43.19A, Recycled Product Procurement) requires schools to substantially increase the procurement of recycled content products.

In 2003 a new state law created the Washington Natural Science, Wildlife, and Environmental Education Partnership Account and Grant Program under the administration of OSPI (Chapter 22, Laws of 2003 (HB 1466)). The law reads in part: *The natural science, wildlife, and environmental education grant program is hereby created, The program is created to promote proven and innovative natural science, wildlife, and environmental education programs that are fully aligned with the state's essential academic learning requirements, and includes but is not limited to instruction about renewable resources, responsible use of resources, and conservation.*

Executive Orders

Executive Order 07-02 Washington Climate Change Challenge

In July of 2007, Governor Christine Gregoire issued **Executive Order 07-02 Washington Climate Change Challenge**. This order calls for the state's commitment to address climate change by establishing greenhouse gas emissions reduction and clean energy economy goals for Washington State.

The executive order directs Washington state government's Executive Cabinet agencies to provide their full assistance and support in developing the Washington Climate Change Challenge.

Executive Order 02-02, Sustainable Practices by State Agencies

In September of 2002, Governor Gary Locke issued **Executive Order 02-02, Sustainable Practices by State Agencies**. This order calls for sustainable environmental practices for all state agencies. The goal is to use human, environmental, and economic resources more wisely, including the use of energy efficient products, recycled materials, and conservation programs.

The executive order guides Washington state government's long-term sustainability practices and will strengthen the state's economic and environmental vitality. This includes using the state's $1 billion in purchasing power for environmental products and conservation.

The executive order directs state agencies to establish sustainability objectives and prepare a biennial sustainability plan to modify their practices. It also calls for the Office of Financial Management to designate

a person to assist state agencies in meeting their goals and establishes an advisory council to advise state agencies on how to apply sustainability measures to government operations. The Governor also invited institutions of higher education, schools, elected officials, commissions, and others to participate in implementing this executive order within their organizations. For more information, visit the Office of the Governor's Web site at www.governor.wa.gov.

Appendix H

Glossary

Aluminum – A silvery nonferrous metal found in the ore bauxite. It is used to make hard, light, corrosive-resistant materials such as beverage cans and food-service containers. It is easily recyclable.

Avoided Costs – Costs for services such as dumpster fees that are reduced or eliminated by waste reduction and recycling methods.

Baler – A machine that compacts waste materials to reduce volume, usually into rectangular bales, which makes the materials ready for marketing.

Bauxite – The clay-like ore from which most aluminum is made.

Biodegradable – An organic material is biodegradable if it can be broken down by microorganisms into simple, stable compounds such as carbon dioxide and water. Food and paper are examples of biodegradable organic products.

Boxboard – Paper used in manufacturing cartons and rigid boxes.

Buy-Back Recycling Center – A commercial recycling facility that purchases postconsumer recyclable materials from the public.

Central Collection Site – A designated site in a school building for collecting recyclable materials.

Collection Center – A site designed to accept recyclable materials from individuals.

Collection System – Collectors and equipment used for the collection of solid wastes or recyclables. Collection systems may be classified by mode of operation, equipment used, and types of materials collected.

Commercial Waste – Waste from all nonresidential sources.

Commingled Collection – Collection of several types of recyclable materials in one container.

Compost – The stabilized and sanitized product of composting, which is beneficial to plant growth; it has undergone an initial, rapid stage of decomposition and is in the process of humification.

Composting – A biological process which stabilizes organic matter for use in soil enhancement. Compostable items include yard and garden waste, and food wastes.

Cullet – Crushed scrap glass, used as part of the batch to make new glass.

Curbside Collection – Home or residential collection programs where recyclables are set out and collected at the curb for hauling to processing facilities.

Degradable – Capable of being chemically or organically reduced or degraded.

De-inking – The removal of ink, filler, and other nonfibrous material from printed waste paper.

Drop Box – Container used to collect self-hauled waste or recyclable, separated materials from individuals and businesses.

Dumpster – A large, outside trash collection receptacle, designed to be hauled away, emptied, and returned to the collection site.

Ecology – The interrelationships between organisms and their environment.

End User – Mills and other industrial facilities where secondary materials are converted into new materials. Paper mills, steel mills, and glass container production plants are examples of end users.

Environmentally Preferable Purchasing (EPP) – Environmentally preferable purchasing is the acquisition of products or services that have a lesser or reduced negative effect on human health and the environment when compared with competing products or services that serve the same purpose. This takes into

consideration the impacts of a product and packaging throughout the entire life cycle, including final disposition.

Feedstock – Raw materials input to a process.

Generator – An individual, company, organization, or activity that produces wastes or secondary materials.

Glass – Any of a large class of materials that solidify from a molten state without crystallization, and are generally clear or colored green or brown.

Grade – A class of secondary material that is distinguished from similar classes on the basis of quality, color, use, content, appearance, contamination, density, or other factors.

HDPE – High-density polyethylene, a plastic resin used to make plastic containers such as milk jugs and detergent containers. In the national plastic coding system HDPE is number two.

High-Grade Waste Paper – White computer paper and white ledger paper are examples of high-grade paper.

Humus – The organic portion of soil created by the partial decomposition of organic matter.

Humification – A process of storing organic energy into compounds of high molecular weight which are slowly degrading.

Kraft Paper – A coarse, brownish paper noted for its strength, used in shopping bags and corrugated cardboard.

Landfill – A disposal facility at which solid waste is placed in or on land. See also Sanitary Landfill.

Leachate – Liquid that has percolated through solid waste in a landfill, or has been generated by decomposition of solid waste. This liquid may contaminate ground or surface water and is especially a problem in areas of high rainfall and porous, sandy-gravelly soil.

LDPE – Low-density polyethylene, a plastic resin used in cosmetic packaging and filmy plastic bags. In the national plastic coding system LDPE is number four.

Mandated Recycling – Programs that require by law certain recycling practices or results.

Material Recovery Facility (MRF) – A MRF is a facility in which mixed recyclables are separated from each other and processed to the specifications of the markets for each material.

Materials Management – A comprehensive approach to the acquisition and effective use of material products, and—once their usefulness as products is exhausted—their recycling as raw materials for further production or environmental benefit.

Micro-Scale Chemistry – Scaled-down versions of laboratory experiments. Micro-scale chemistry reduces the amount of chemicals used, amount of waste produced, and the amount of waste for disposal.

Mixed Paper – Waste paper of various kinds and quality usually collected from stores, offices, and schools; for example, colored paper.

Municipal Solid Waste (MSW) – Solid wastes generated by residents, businesses, and schools.

Neutralization – A step in the laboratory procedure of a chemistry experiment that adds a compound which treats a hazardous material and renders it into a nonhazardous state.

Operating Costs – Recurring program costs, such as labor, equipment operation, maintenance, utilities, administration, and promotion.

Paper – A thin material made of cellulose fiber pulp, derived mainly from wood. Paper can be recycled many times before its fibers become too short for reuse.

Paperboard – Paperboard is a distinguished from other paper by being heavier, thicker, and more rigid.

PET – Polyethylene terephthalate, a plastic resin used to make beverage containers. In the plastic coding system PET is number one.

Plastic – Any of a large class of complex, organic compounds made from hydrocarbons. Plastic can be molded or cast into various shapes and films.

Pollution – Material wasted in a way that does much more harm than good. For instance, air pollution is really material that has been wasted by an inefficient factory, automobile engine, or wood stove. This waste material ends up making our air, our water, and the rest of our environment dirty.

PP - Polypropylene – A plastic resin used to make containers that hold products poured in hot, such as molasses or syrup containers. It is also used for some yogurt tubs and medicine bottles. In the national plastic coding system PP is number five.

PS - Polystyrene – A hard, dimensionally stable thermoplastic that is easily molded. Polystyrene is used to make cups for hot drinks. It is also used to make the "peanuts" used as packing materials. In the national plastic coding system PS is number six.

Recycling – Separation of recoverable materials from the waste stream and reprocessing these materials for use in the manufacture of new products. Recycling includes "closing the loop" by purchasing recycled and recyclable materials.

Recycling Center – A site where manufactured materials are collected to be resold for reprocessing.

Resource Conservation Program – A well-coordinated effort to manage the resources and services used, and the waste generated, by a facility.

Resource Recovery – The extraction of economically usable materials from waste.

Sanitary Landfills – Specially-engineered landfills that have impermeable liners to block the movement of leachate into ground water, a leachate collection system, gravel layers permitting the control of methane, and other features. Each day's garbage is covered with a layer of earth.

Source Separation – The separation of different kinds of solid waste at the place where the waste originates. Examples of source separation are sorting out recyclable materials from nonrecyclables in business, household, or school wastes.

Sustainability – As used in relation to the economy and the environment, this term means meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Throwaway – A disposable waste item, not designed for reuse or recycling.

Tipping Fee – The charge made for unloading waste at a landfill, incinerator, or recycling center.

Vermicompost – Mixture of partially decomposed organic waste, bedding, worm castings, and other associated organisms.

Vermicomposting – The use of worms to digest raw or stabilized organic waste, usually food waste.

Waste Audit – An inventory of the amount and type of waste that is produced at a specified location.

Waste Management – Devoting a lot of time and money toward disposal of material you probably didn't need in the first place.

Waste Reduction – The prevention or elimination of waste at the point of generation. Reduction aims at not generating waste in the first place, using less toxic alternative products, and reusing materials.

Waste Stream – The waste material output of an area or facility.

Yard Waste – Grass clippings, leaves, and tree trimmings from yards and landscaped areas

Appendix I – Application Forms and Instructions

The deadline for applications is 5 p.m., February 28, 2011.

Each award category has a separate application form. Please fill out the appropriate application form for the award category in which you intend to apply. **Electronic submissions** (in Adobe Acrobat PDF or MS Word compatible file formats) **are strongly encouraged.**

Be sure to read the instructions and guidelines before completing the application. (Award tips are provided on pages 3-4 of the guide.) Please limit your entire application to four pages or less and use an 11-point font. **Ecology will not consider any applications submitted after the deadline.**

Applications should be addressed to:

E-mail	Standard Mail (United States Postal Service)	Priority Mail (All other carriers)
alissa.ferrell@ecy.wa.gov	Alissa Ferrell Department of Ecology PO BOX 47600 OLYMPIA WA 98504-7600	Alissa Ferrell Department of Ecology 300 DESMOND DRIVE SE LACEY WA 98503

DEPARTMENT OF ECOLOGY
State of Washington

Terry Husseman Sustainable School Award

2011 SEED AWARD APPLICATION

****Be sure to read the instructions and guidelines before completing the Application.**
Please limit your entire application to four pages or less and use an 11-point font.

ORGANIZATIONAL INFORMATION–SEED AWARD

Complete all items in this section.

1. Program or Curriculum Title:

2. Give a two-sentence description of your program:

3. Contact Information:

School Name:

School District:

Legislative District:

Mailing Address:

County:

Contact Person:

Official Title:

Contact Phone:

Fax Number:

E-mail Address:

School Website:

4. Demographics:

Number of students:

Number of staff and faculty:

Number of students with free or reduced lunch:

Grade level:

If you need this publication in an alternate format, please call the Waste 2 Resources Program at (360) 407-6900. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

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PROGRAM INFORMATION–SEED AWARD

Complete all questions in this section. Keep all answers brief, using no more than ten sentences per question.

5. Provide a brief overview of your proposed program. How will your program improve the environment? Explain how your program will tie into the goals of the Terry Husseman Sustainable School Award Program. (This description may be used in speeches, press releases, or publications for the Terry Husseman Award ceremony.)

6. What resources are available to make this program successful? These resources could include access and affordability of local haulers, service providers, school space dedicated to the program, paid staff, volunteers, student time, etc.

7. What important resources are not available to you? How might the lack of these resources hinder the program's success? How do you plan to overcome these barriers?

8. How do you plan to involve students, faculty, and staff to achieve your goals? If applicable, how will community members contribute to the program's success?

9. How will this program benefit the school and community? Explain what tools or knowledge the students and community will gain through this program. Discuss the benefits, beyond environmental improvement, that this program offers such as health and wellbeing, community involvement, participation opportunities, hands on learning, economic gain, etc.

10. What outcomes do you hope to see through this program? If appropriate, provide anticipated measurable data; explain your method for measurement and how these figures will express your programs success.

11. If applicable, describe your most successful waste reduction, recycling, or sustainability programs. Include any awards received from these efforts. Keep each description to ten sentences or less.

Program 1:

Program 2:

Program 3:

12. Ecology wants to invest in programs that will keep going. How will you ensure the longevity and success of this program?

BUDGET INFORMATION–SEED AWARD

Complete all questions in this section. See below for a list of eligible costs before answering this question.

13. Budget:

Total Program Budget:

Total Unfunded:

14. Outside Funding Sources:

Do you have written agreements with outside funding sources?

Yes ☐ No ☐

Total Funding from Outside Sources

15. Funding Gap

If part of the budget is unfunded, please explain how your school will fill the funding gap.

16. Financial Sustainability

What financial planning have you done to ensure the program can remain in operation from year to year?

17. Proposed Expenses

List all expenses you would like your Seed Award to cover.

	Item	Cost
A.		
B.		
C.		
D.		
E.		
F.		
	Total	

18. Planning

List each action necessary to complete your proposed project, the person responsible, and the estimated completion date.

	Action	Who is Responsible	Completion Date
	List each action that must be taken to complete the project.	*Title of person to complete the action, i.e., teacher*	*Estimated completion date*
A.			
B.			
C.			
D.			
E.			
F.			
G.			

Examples of Ineligible and Eligible Costs		
Ineligible Costs		Eligible Costs
Architectural designs Consultant Fees WAGES or STIPENDS Hauling costs Dump fees Computer equipment or electronics Recycled paper Non-toxic cleaning supplies Studies or plans Promotional tee-shirts Transportation costs		Purchase equipment for recycling Gloves and protective gear Composting equipment Organic gardening supplies Integrated Pest Management Supplies

Terry Husseman Sustainable School Award

2011 SUSTAINABLE SCHOOL AWARD APPLICATION

****Be sure to read the instructions and guidelines before completing the Application.**
Please limit your entire application to four pages or less and use an 11-point font.

ORGANIZATIONAL INFORMATION– SUSTAINABLE SCHOOL AWARD

Complete all items in this section.

1. **Program or Curriculum Title:**

2. **Give a two-sentence description of your program or curriculum.**

3. **Contact Information:**

   School Name:

   School District:

   Legislative District:

   Mailing Address:

   County:

   Contact Person:

   Official Title:

   Contact Phone:

   Fax Number:

   E-mail Address:

   School Website:

4. **Demographics:**

   Number of students:

   Number of staff and faculty:

   Number of students with free or reduced lunch:

   Grade level:

If you need this publication in an alternate format, please call the Waste 2 Resources Program at (360) 407-6900. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

PROGRAM INFORMATION–SUSTAINABLE SCHOOL AWARD

Complete all questions in this section. Keep all answers brief, using no more than ten sentences per question.

5. Provide a brief overview of your program. How has your program improved the environment? (This description may be used in speeches, press releases, or publications for the Terry Husseman Award ceremony.)

6. Provide a brief history of your program. How long has your program been in operation? Include successes and barriers. What steps have you taken to avoid past problems in the future of your program?

7. If appropriate, provide measurable data for your current program; explain your method for measurement and how these figures will express your program's success. Examples may include how much less waste your school has produced, how many tons of paper you have recycled, etc.

8. How has your school carried out your program in the past year? Discuss the availability and affordability of necessary resources. (Resources may include environmentally preferable products and services [EPP], paid staff, volunteers, student time, etc.) See glossary section of the guide for a description of EPP.

9. How have you involved students, faculty, and staff to achieve your goals? If applicable, how do community members contribute to the program's success?

10. How has this program benefited the school and community? Explain what tools or knowledge the students and community gain through this program. Discuss the benefits, beyond environmental improvement, that this program has offered such as health and wellbeing, community involvement, participation opportunities, hands on learning, economic gain, etc.

11. Briefly describe your school's previous environmental programs, if any. If appropriate, provide measurable data for these programs. Explain what made your programs successful or why they failed. If applicable, explain what steps you have taken to resolve these issues to ensure success in future programs. (Maximum three programs)

Program 1:

Program 2:

Program 3:

12. Briefly describe your vision for the future of this program. What will it look like next year? How will it evolve? What will your school do to keep this program going year after year?

DEPARTMENT OF ECOLOGY
State of Washington

Terry Husseman Sustainable School Award

2011 CREATIVE ENVIRONMENTAL CURRICULUM APPLICATION

****Be sure to read the instructions and guidelines before completing the Application.**
Please limit your entire application to four pages or less and use an 11-point font.

ORGANIZATIONAL INFORMATION—CREATIVE ENVIRONMENTAL CURRICULUM AWARD

Complete all items in this section.

1. **Program or Curriculum Title:**

2. **Give a two-sentence description of your program or curriculum.**

3. **Contact Information:**

   School Name:

   School District:

   Legislative District:

   Mailing Address:

   County:

   Contact Person:

   Official Title:

   Contact Phone:

   Fax Number:

   E-mail Address:

   School Website:

4. **Demographics:**

   Number of students:

   Number of staff and faculty:

   Number of students with free or reduced lunch:

   Grade level:

If you need this publication in an alternate format, please call the Waste 2 Resources Program at (360) 407-6900. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

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PROGRAM INFORMATION–CREATIVE ENVIRONMENTAL CURRICULUM AWARD Complete all questions in this section. Keep all answers brief, using no more than ten sentences per question.
5. Provide a brief overview of your curriculum. How does your curriculum inspire environmental stewardship in the students, staff, and community? (This description may be used in speeches, press releases, or publications for the Terry Husseman Award ceremony.)
6. Which student groups or grade levels did you reach with this curriculum? What teaching methods did you use to reach this these students?
7. How has your school carried out the curriculum in the past year? Discuss the access to necessary resources such as education materials, paid staff, volunteers, student time, etc.
8. What roles have the students and faculty played in planning, preparing, and using this curriculum?
9. How is the curriculum integrated into the school's current mission? How has the administration and community recognized the value and cooperated with the goals of the curriculum?
10. How does the curriculum meet the Washington State Essential Academic Learning Requirements (EALR)? For current EALR information refer to http://www.k12.wa.us/CurriculumInstruct/EALR_GLE.aspx.
11. Explain what tools or knowledge the students and faculty gained through this curriculum. How does this curriculum help students and faculty understand the economic and social benefits of environmental stewardship?
12. Briefly describe your vision for the future of this curriculum. What will it look like next year? How will it evolve? What will your school do to keep this program going year after year?

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