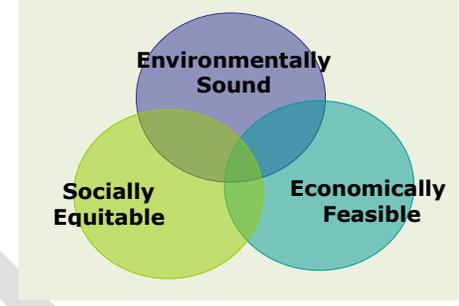




 **VIRGINIA BEACH CITY PUBLIC SCHOOLS**
AHEAD OF THE CURVE



Sustainable Purchasing Best Practices Guide

Office of Purchasing Mission Statement:
Our mission is to manage the procurement of essential goods and services by developing and maintaining the most efficient, cost-effective processes.



Virginia Beach City Public Schools
Sustainable Purchasing Best Practices Guide

Table of Contents

Introduction.....	3
Executive Summary	3
Life Cycle Cost:	5
Methodology for Calculating Life Cycle Costs / TCO:	5
Vendor Considerations.....	6
Product Considerations	7
Service Considerations	8
Definitions	9

Introduction

On February 17, 2010, Virginia Beach City Public Schools (VBCPS) adopted **School Board Policy 3-67**, which directs environmentally sustainable practices throughout the School Division. This policy recognizes the critical importance of sustainability in today's changing world and recognizes that VBCPS is committed to fostering the principles of environmental, economic, and social stewardship through the incorporation of sustainable practices. This document, **Sustainable Purchasing Best Practices Guide**, has been developed to support thoughtful purchasing decisions with the goal of procuring the most sustainable products and services for our students and staff.

Executive Summary

VBCPS has supported its sustainability goals by adopting a number of provisions in support of economic savings, operational efficiency, environmental stewardship and community health. Many of these are related to the goods and services that VBCPS purchases. Examples include:

- A policy on the purchase of recycled paper and Energy Star appliances,
- A policy on minimizing School Division waste,
- A LEED building certification policy,
- A toxics reduction strategy and more.
- Reducing the amount of paper used to transact business by using ecommerce and electronic processes for requisitioning, purchase orders, solicitation processes.

The **Sustainable Purchasing Best Practices Guide** further demonstrates support of VBCPS sustainability goals by integrating sustainability into the procurement process for goods and services. Sustainable purchasing practices benefit students, staff, the environment, and the greater community at large. In addition, sustainable purchasing practices create opportunities for long-term economic savings within the School Division. Sustainable products & services often prove to be more efficient, durable, and strive to avoid waste at all levels of production and use, which can ultimately translate into dollars saved by the School Division.

Recognizing our impact as a major purchaser of goods and services, VBCPS strives to utilize sustainable products whose quality and function are equal or superior to comparable products for an equal or lesser cost. This guide seeks to support purchasing decisions that can:

- Lead to life cycle cost savings
- Conserve natural resources and minimize pollution
- Eliminate or reduce environmental health hazards within VBCPS and our larger community
- Create increased efficiency for students and staff while supporting excellent customer service and educational requirements
- Support vendors who reduce environmental impacts and are socially responsible in their production and distribution systems or services
- Educate ourselves, our vendors, and our end users

By including sustainability as a strategic priority in managing investments for services and goods, VBCPS has the potential to realize a greater return on investment economically, socially and environmentally.

Life Cycle Cost:

Life cycle cost, sometimes referred to as Total Cost of Ownership (TCO), refers to the sum of all costs incurred throughout the lifetime of owning or using an asset. This means considering costs beyond the original purchase price.

A product's environmental and economic effects throughout its lifetime, including durability, efficiency, transportation, manufacturing, use, and disposal, may translate into a higher purchase price for sustainable products initially, but may often translate into a lower life cycle cost over the life of the product.

Considering TCO during the procurement process enables decision makers to look at asset procurement in a more strategic way, beyond the lowest bidder. It levels the playing field when choosing among competitive bids where the lowest priced bid may or may not be the least costly asset to procure over the lifetime of the product.

Methodology for Calculating Life Cycle Costs / TCO:

There are many methods and components used to determine LCC/TCO. Following is an example of components of LCC/TCO, and how they might be used to compare products for an award. $TCO = (PP_i + C_{tp} + C_{ap} + C_m + C_o + C_d) / L_y$

- 1. Initial purchase price (PP_i):** What is the initial purchase price?
- 2. Training and other personnel costs (C_{tp}):** What will the training or personnel costs be over the product's useful life? Be sure to consider training required to maximize the product's resource efficiency. Perhaps this training will need to occur more than once throughout the life of the product.
- 3. Cost of auxiliary products (C_{ap}):** Calculate the cost of any consumable auxiliary products over the product's useful life. Examples include ink, toner cartridges, or special trash can liners.
- 4. Maintenance costs (C_m):** Calculate any maintenance costs over the product's useful life, including how often service is anticipated and the cost of a maintenance contract.
- 5. Additional operational costs (C_o):** Calculate any operation costs over the product's useful life, such as related increase in water, energy, or other limited resource usage.
- 6. Product disposal, reuse or resale (C_d):** Include any additional costs associated with the disposal of the product at the end of the product's useful life. Alternatively, reduce your total cost sum by any costs savings incurred from re-use or a vendor take-back program (this would be shown as a negative cost).
- 7. Prediction of useful life (L_y):** Determine the number of years the product is expected to stay in service before being replaced. Considerations: Is the purchase for a short project? If yes, then what will happen to the product once the project is completed? If borrowing or leasing is not possible, what is the predicted life of the product? Does it come with any warranties?

Vendor Considerations

In order to better understand the product's environmental attributes, vendors can be required to answer sustainability questions related to their business practices as a whole. Generally speaking, the greater the number of practices the vendor follows and/or the more detail the vendor can provide, the more likely it is that the vendor takes sustainability seriously, which can translate into higher cost savings over the life and use of the product.

Through this review process, vendors with the most efficient product can be identified. Subsequently, vendors currently under contract that formerly may not have considered sustainability in their operations may see the benefits of incorporating sustainability in their delivery of goods and services to the School Division, resulting in greater education and cost savings for all involved.

1. **Leaders on Sustainability in their Respective Industry:** Is the vendor knowledgeable about sustainability in their respective industries? Do they have metrics for savings and efficiencies as a result of operating sustainably? Do they have an Environmental Product Declaration (EPD), and is it a product specific declaration, an industry-wide generic declaration, or a product-specific type III (externally verified) declaration?
2. **Sustainable Purchasing Policy:** What is the vendor's sustainable purchasing policy for their raw materials? Use of third party certifications such as Green Seal, EPA's Design For the Environment , Ecologo, Rainforest Alliance, etc.?
3. **Energy Conservation Management:** Does the vendor communicate with and educate employees and customers on energy conservation? Is there a policy for use of recognized standards such as Energy Star, ISO 14000, etc., within their facilities?
4. **Water Conservation Management:** What are the vendor's water conservation management plans and goals at their facilities?
5. **Waste Reduction and Recycling:** Do the vendor's facilities adhere to a waste reduction and recycling plan? What are the documented goals, baseline measures, and tracking mechanisms?
6. **Sustainable Delivery Methods / Carbon Emissions:** Is the delivery method of the product thoughtful to minimize energy use / reduce carbon emissions when possible? Has the vendor performed an emissions analysis of their operations? Are there flexible commuting options and incentives in place for their employees?
7. **MWESB:** Does the vendor utilize and/or support Minority, Women or Emerging Small Businesses (MWESB)?
8. **Environmental Stewardship Record:** What is the vendor's record on environmental stewardship? Has the vendor received any award for environmental stewardship?

Product Considerations

Goods that are durable, re-usable, longer lasting, rechargeable or refillable are often a better option than lower quality or disposable items because they are often more economical in the long-term. While longevity and reliability may cause some to have a higher initial purchase price, considering the life cycle cost / TCO of the product will help realize the highest return on investment.

- 1. Embodied Resource Conservation:** Prioritize products that are the least energy and water intensive to manufacture or harvest. Is the product manufactured in a way that conserved energy, water and/or other natural resources? Was renewable energy used in the manufacturing of the product?
- 2. Energy Conserving:** Does the product require a lot of energy to be used within the School Division, particularly when compared to like products? Does the product carry an Energy Star (or similar) rating?
- 3. Water Conserving:** Does the product require a lot of water to be used within the School Division, particularly when compared to like products? Does the product carry a Water Sense (or similar) rating?
- 4. Conservation Options:** Are there options to increase the product's energy efficiency, water efficiency, and/or decrease directly related wastes that can be explored?
- 5. Sustainable Certifications:** Is the product certified as sustainable, such as Energy Star, Green Seal, EAPEAT, ISO 14000, etc.?
- 6. Produced with Recycled Materials:** Is the product made of recycled materials? If yes, what percentage is post-industrial and what percentage is post-consumer recycled content? School Board Policy 3-67 requires the purchase of a minimum 30% recycled content paper in lieu of standard office paper for all purchases, unless it is cost prohibitive.
- 7. Toxic or Hazardous Materials:** Is the product comprised of toxic or hazardous materials? Minimize the use of products manufactured with or comprised of toxic or hazardous materials.
- 8. Sustainable Packaging / Delivery:** Is packaging associated with the product recyclable, reusable or compostable? Does it minimize waste? Does the delivery method minimize carbon emissions? By reducing packaging, more products can be packed into shipping cartons and more cartons onto pallets. This results in fewer truckloads and a corresponding reduction in the burning of fossil fuels as well as associated harmful emissions. The reduction in material and energy costs can also result in a more cost effective purchase.
- 9. Durability / Life Expectancy:** Is the product made of durable materials? What is the life expectancy of the product? How has this been tested or verified? What happens to this product at the end of its useful life?
- 10. Reusable:** Is the product durable enough to be repurposed or reused by either the School Division or in a Surplus Auction?
- 11. Recyclable or Compostable:** Is the product easily recyclable or compostable? Does the vendor provide additional recycling options?

Service Considerations

Services that can be proven to be dependable, efficient, time-saving, and cost saving are a better option than lower quality services because they are often more economical in the long-term. While these factors may cause some to have a higher initial purchase price, considering the life cycle cost / TCO of the service will help realize the highest return on investment.

1. **Embodied Resources:** Does the service utilize products that conserved energy, water and/or other natural resources? Is renewable energy used in the delivery and upkeep of the service?
2. **Limited Training Involved:** Is there much need for training with the related service? If so, does this training require an extensive amount of long distance travel or can accommodations be made for site-based training?
3. **Lower Resource Use:** Does the service help the School Division lower carbon emissions, water consumption, and/or other natural resource consumption when compared to a like service?
4. **Energy Conserving:** Does the service require a lot of energy to be used within the School Division, particularly when compared to like services?
5. **Water Conserving:** Does the service require a lot of water to be used within the School Division, particularly when compared to like services?
6. **Conservation Options:** Are there options to increase the service's related energy efficiency, water efficiency, and/or decrease directly related wastes that can be explored?
7. **Sustainable Certifications:** Does the related service help in sustainable initiatives or certifications, such as Energy Star, Green Seal, EAPEAT, ISO 14000, etc.?
8. **Life Expectancy:** Will the service be beneficial to the School Division for a significant amount of time? What is the life expectancy of the service or related outcomes? Has this been tested or verified?

Definitions

Carbon emissions: the result of burning fossil fuels such as gas, coal or oil, emitting carbon dioxide into earth's atmosphere. When done at such a high rate that the natural carbon cycle is overly burdened & the ability of plants and trees to reabsorb the carbon dioxide is exceeded, it is often considered harmful to the environment. The total carbon emission individuals/businesses emit is often measured as a **carbon footprint**. The act of calculating carbon emissions is often referred to as **emissions analysis**.

Conservation: the careful preservation & protection of a quantity during transformations or reactions of something; especially planned management of a natural resource to prevent exploitation, destruction, or neglect

- Energy conservation
- Water conservation
- Natural resource conservation

Compostable: able to be recycled into a mixture that consists largely of decayed organic matter and is used for fertilizing and conditioning land

EcoLogo™: An environmental standard certification mark that is recognized world-wide and is North America's largest environmental certification mark. EcoLogo™ provides customers; public, corporate and consumer, with assurance that the products & services bearing the logo meet stringent standards of environmental leadership.

Embodied energy/resource: the sum of all the energy (or resources) required to produce goods or services, considered as if that energy was incorporated or 'embodied' in the product itself; assessing the relevance and extent of energy into raw material extraction, transport, manufacture, assembly, installation, dis-assembly, deconstruction and/or decomposition as well as human and secondary resources. The concept can be useful in determining the effectiveness of energy-producing or energy-saving devices

Energy Star: a joint program, including product certification, of the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy helping us all save money and protect the environment through energy efficient products and practices.

Environmental Product Declaration (EPD): applicable worldwide this standard is used to communicate the environmental performance of a product or system with the overall goal to provide relevant, verified and comparable information about the environmental impact from goods and services. A declaration is based on a **Life Cycle Assessment**. It includes information about the environmental impacts associated with a product or service, such as raw material acquisition, energy use and efficiency, content of materials and chemical substances, emissions to air, soil and water and waste generation. It also includes product and company information.

Environmental Stewardship: refers to responsible use and protection of the natural environment through conservation and sustainable practices

EPA's Design for the Environment (DfE): with expertise in Green Chemistry, toxicology, and modeling, DfE analyses and certifications enable industry to identify safer chemicals and alternatives to chemicals.

Green Seal: a non-profit organization that uses science-based programs to empower consumers, purchasers and companies. Green Seal offers third-party certification for products, services and companies that meet life cycle-based sustainability standards

Greenhouse gas: any of various gaseous compounds (as carbon dioxide) that absorb infrared radiation, trap heat in the atmosphere, and contribute to the greenhouse effect

ISO 14000: is a family of standards related to environmental management that exists to help organizations (a) minimize how their operations (processes etc.) negatively affect the environment (i.e. cause adverse changes to air, water, or land); (b) comply with applicable laws, regulations, and other environmentally oriented requirements, and (c) continually improve in the above.

Life cycle cost: Sum of all recurring and one-time (non-recurring) costs over the full life span or a specified period of a good, service, structure, or system. In includes purchase price, installation cost, operating costs, maintenance and upgrade costs, and remaining (residual or salvage) value at the end of ownership or its useful life.

Natural resources: materials and capacities supplied by nature (as mineral deposits and waterpower)

Post-consumer recycled content: Content recycled from waste produced by the end consumer of a material stream. Post-consumer waste is the garbage that individuals routinely discard, either in a waste receptacle or a dump, or by littering, incinerating, pouring down the drain or washing into the gutter. The use of post-consumer recycled content avoids using virgin resources.

Post-industrial recycled content: waste that is produced during the manufacturing process that is recycled back into the industrial process. In many cases, industry was already recycling this material back into the process and thus post-industrial recycled content is not as significant as post-consumer recycled content.

Rainforest Alliance: an organization that works to conserve biodiversity and ensure sustainable livelihoods by harnessing the power of the marketplace to arrest the major drivers of environmental destruction: timber extraction, agricultural expansion, cattle ranching and tourism. The organization works to support hundreds of millions of acres of forests, farms, ranchlands and hotel properties meet rigorous sustainability standards and that the rights and well-being of people employed by these enterprises are safeguarded.

Also gives consumers a reliable way to identify responsibly produced goods and services -- via the Rainforest Alliance Certified™ seal and Rainforest Alliance Verified™ mark, demonstrating that sustainable businesses thrive in our global economy.

Renewable energy: energy that comes from resources which are continually replenished such as sunlight, wind, rain, tides, waves and geothermal heat.

Sustainable: a method of harvesting or using a resource so that the resource is not depleted or permanently damaged while understanding the interconnections within our natural and built world; economy, society, and environment. A fluid concept with various definitions, sustainability was given global political salience when defined by the United

Nations (UN) General Assembly as; meeting the needs of tomorrow without compromising the ability of future generations to meet their own needs.

Total Cost of Ownership (TCO): refers to the sum of all costs incurred throughout the lifetime of owning or using an asset. This means considering costs beyond the original purchase price. For the purposes of this guide total cost of ownership (TCO) can be calculated as $TCO = (PPI + Ctp + Cap + Cm + Co + Cd) / Ly$, where
(Initial purchase price (PPI) + Training and other personnel costs (Ctp) + Cost of auxiliary products (Cap) + Maintenance costs (Cm) + Additional operational costs (Co) + Product disposal, reuse or resale (Cd)) / Prediction of useful life (Ly)

Triple bottom line: Coined in 1994, the triple bottom line aims to measure the financial, social and environmental performance of businesses over a period of time. A company that produces a triple bottom line is taking account of the full cost involved in doing business. It is also often referred to as the three “p’s” people, planet, profit.

Waste reduction: Minimization of waste at its source to minimize the quantity required to be treated and disposed of, achieved usually through better product design and/or process management. Waste reduction is also referred to as waste minimization.