



Sustainable Cleaning Supplies

Prepared by:
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Procurement
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OCP Sustainable Purchasing Program

Who We Are & What We Do

- Assist DC in meeting its sustainability goals by furthering environmentally preferable procurement of goods and services through:
 - Developing and maintaining environmental specifications for products and services
 - Offering training and online resources for DC agencies and procurement professionals to assist in green procurement
 - Vendor education and outreach
 - Consulting services for programs seeking to buy green
 - Tracking green purchasing progress and recommending improvements to the program

Learning Objectives

- At the completion of this education, you will be:
 - Introduced to the benefits of sustainable cleaning supplies.
 - Introduced to the sustainable specifications for cleaning supplies
 - Informed of differences in cost and performance of products meeting the specifications and conventional products
 - Aware of tools and resources for researching and finding products that meet recommended specifications
 - Aware of options for including more aggressive environmental attributes not included in the guidance specification.

Importance

Sustainable cleaning supplies **protect the health and safety** of building occupants and custodial staff.

- Chemicals commonly found in cleaning supplies have been linked to:
 - asthma,
 - burns,
 - skin/eye irritation,
 - headaches,
 - dizziness,
 - reproductive disorders,
 - cancer
- **Healthy Schools Act of 2010** requires use of environmentally friendly cleaning products
- The District spent **\$5.2 million** on cleaning supplies in FY11-13



Image courtesy of <http://www.lifescrypt.com>

Cleaning Supplies Category

Performance

- Same level of cleanliness and appearance can be achieved for green and conventional products for most product types.

Availability

- Multiple local and national vendors offer sustainable cleaning supplies.

Cost

- Prices comparable for green and conventional products for most product types.
- Significant savings from concentrated products and implementing green cleaning practices.

Scope of Sustainable Cleaning Supplies Guidance

- A. General cleaning products
- B. Disinfecting and sanitizing products
- C. Specialty cleaning products
- D. Miscellaneous janitorial supplies



Category A General Cleaning Products

1. General purpose (all purpose) cleaners and degreasers
2. Bathroom cleaners and deodorizers (includes hard surface, toilet, and urinal)
3. Glass, mirror, and window cleaners
4. Carpet, rug, and upholstery cleaners (includes routine and spot cleaning products)
5. Floor cleaners, strippers, sealers, and finishes
6. Hand soaps, hand cleaners, and hand sanitizers



Category A General Cleaning Products

Environmental Requirements

1. Products shall be certified to **at least ONE (1)** of the following standards:
 - a. Green Seal
 - b. EcoLogo
 - c. EPA Design for the Environment (DfE)
(also referred to as EPA Safer Choice)



Ecolabel Background

- **All ecolabels in the cleaning products specification:**
 - Indicate a product is environmentally preferable based on credible, third party standards.
 - Include performance, human health, and environmental criteria.
 - Are commonly specified by U.S. jurisdictions
 - Contribute to earning LEED v4 BOM credits
- Products with recognized ecolabels are available through the DC Supply Schedule (DCSS) or Certified Business Enterprises (CBE).



Cleaning Product Eco-label Search Tips

- DC Supply Schedule (DCSS) or Certified Business Enterprises (CBE) websites
 - Ecolabel certification listed in product details
 - 'Green' search feature frequently available
- Ecolabel-specific directories of certified products:
 - Green Seal product directory:
<http://www.greenseal.org/FindGreenSealProductsAndServices.aspx>
 - EcoLogo product directory:
<http://productguide.ulenvironment.com/quickSearch.aspx>
 - DfE/Safer Choice product directory:
<http://www2.epa.gov/saferchoice/products>



Category C Specialty Cleaning Products

1. Metal polish (includes chrome and brass cleaner)
2. Furniture polish
3. Graffiti remover
4. Gum remover
5. Lime and scale remover



Category C Specialty Cleaning Products

Environmental Requirements

1. Products shall either be:
 - a. Green Seal certified
 - b. EcoLogo certified
 - c. EPA Design for the Environment (DfE) certified
(also referred to as EPA Safer Choice); or
 - d. Not contain volatile organic compounds (VOCs) in concentrations that exceed levels required by the [California Air Resources Board's \(CARB\) Regulation for Reducing Emissions from Consumer Products](#).



CARB VOC Compliance: Background & Search Tips

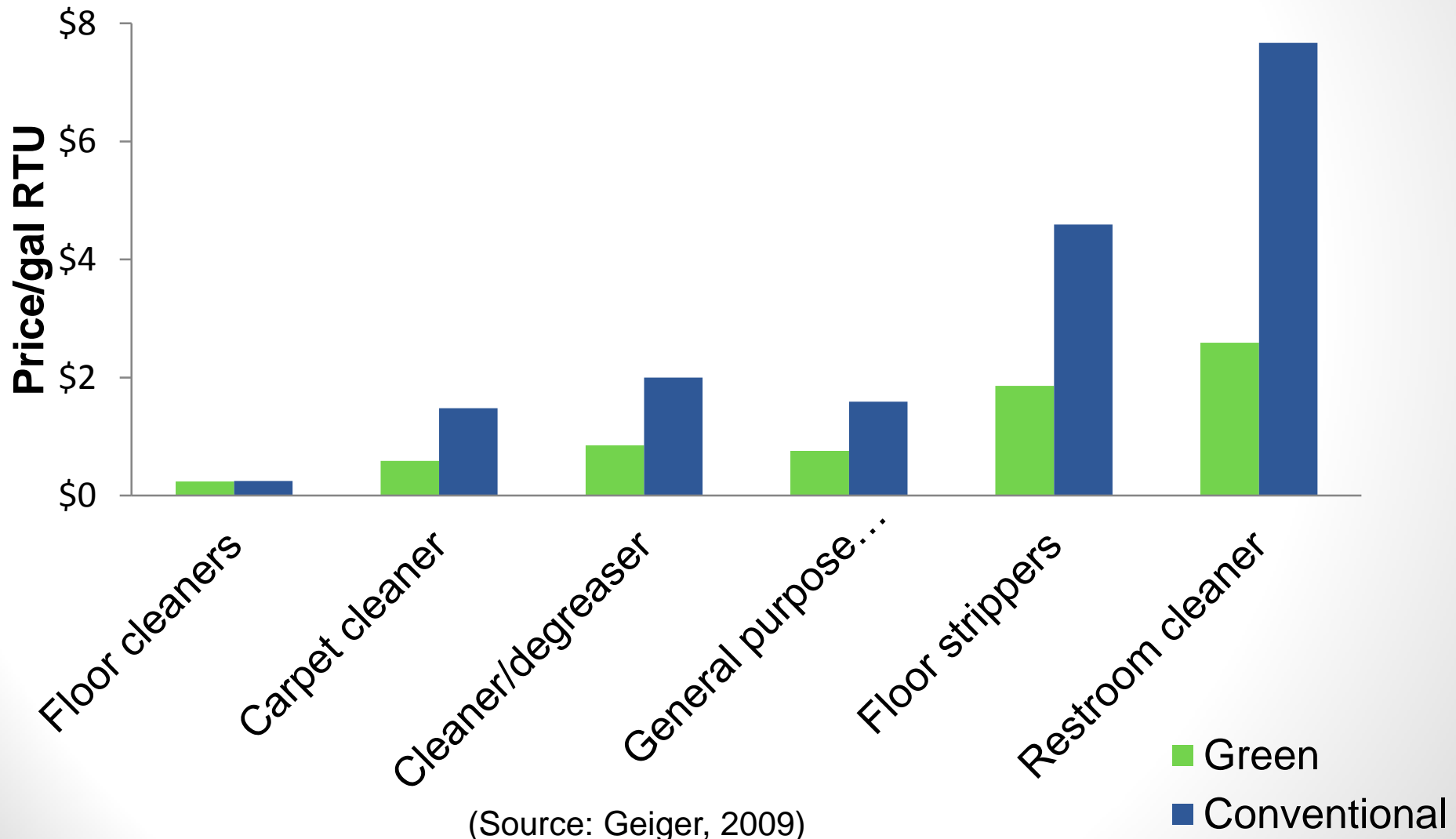
- Volatile Organic Compounds (VOCs) have been linked to adverse health effects ranging from headaches to cancer.
- CARB Regulation for Reducing Emissions from Consumer Products regulates the level of VOCs in products.
- Green Seal, EcoLogo, or DFE/Safer Choice certified products are preferred because they address VOCs and other impact areas.
- Catalogs frequently list if a product is CARB compliant.
- CARB compliance for these products also supports meeting LEED v4 BOM credits.

“Real Costs of Institutional Green Cleaning”

Methodology for 2009 Report

- 373 cleaning products from 26 manufacturer across 8 product categories included in study (Disinfectants not included.).
- Green products defined as Green Seal, EcoLogo, or EPA DfE certified, or on City of San Francisco’s approved green product list.
- All relevant products sold by the following companies were included in the study: Grainger, Staples, Champion Chemical Co., Waxie Sanitary Supply, Starline Supply Co., Neutron Industries.
- All prices are retail list prices – no negotiated contracts
- Product price per ready to use gallon at medium-soil dilution was calculated to allow comparison of products sold in different concentrations and package sizes.

Comparison of Average Price of Green and Conventional Concentrated Cleaning Products



Findings from the “Real Costs of Institutional Green Cleaning” 2009 Report

- Prices are comparable for green and conventional cleaning products in both concentrate and ready to use form.
- A green product was the lowest priced product in four out of seven cleaning product categories.
- Green, concentrated floor strippers are less expensive than conventional, concentrated floor strippers. This is the *only* cleaning product category with statistically significant results.
- Aerosols or ready-to-use (RTU) products are significantly more expensive than the equivalent concentrates

Source: [Espinoza, T., Geiger, C., and I. Everson. 2009. The Real Costs of Institutional 'Green' Cleaning.](#)

Category B Disinfecting and Sanitizing Products

1. Disinfectants : Destroy or irreversibly inactivate bacteria, fungi, and viruses, but not necessarily their spores. Includes health care environment, broad spectrum, and limited efficacy grades.
2. Anti-microbial mold and mildew cleaners: A type of disinfectant designed to kill specific types of mold or mildew. Also called a fungicide.
3. Non-food contact surface sanitizers : Reduce or eliminate microorganisms from the environment to levels considered safe by public health codes and regulation. Sanitizers for use on surfaces where food is prepared or consumed is not covered by this specification.



A Note about Disinfectants and Sanitizers

- Disinfectants and sanitizers keep people healthy by killing bacteria and other microorganisms that make people sick.
- Since they are designed to kill living organisms, they are inherently toxic and should be used only as required.

Do I need a cleaner, disinfectant, or sanitizer?

- Clean first: Effective cleaning is usually sufficient to eliminate 80 — 99% of germs.
 - General cleaning products typically are cheaper and less toxic than disinfectants and sanitizers.
 - After cleaning, use disinfectant and sanitizers where required.
- Develop a disinfectant and sanitizer use policy
 - Establish procedures detailing where, when, and how they should be used, and ensure all janitorial staff are properly trained.
 - General guidelines for targeting disinfectant/sanitizer use can be found in [Appendix C of the Safer Products and Practices for Disinfecting Surfaces Report](#).

Category B Disinfecting and Sanitizing Product Requirements

1. Disinfectants, including antimicrobial mold and mildew cleaners, and non-food contact surface sanitizers shall be EPA FIFRA-registered.
2. The District shall prioritize the purchase of disinfectants and non-food contact sanitizers that only contain the following active ingredients:
 - a. Hydrogen peroxide or accelerated hydrogen peroxide
 - b. Citric acid
 - c. Lactic acid
 - d. Caprylic acid
 - e. Silver

EPA FIFRA-Registered Disinfectant and Sanitizer Background & Search Tips

- The **Federal Insecticide and Fungicide Act (FIFRA)** requires disinfectants and sanitizers to be registered with EPA and use approved efficacy claims.
- Product labels include:
 - EPA Registration No.
 - Types of organisms the product is approved to kill
 - **Dwell time**, or the amount of time it takes for the product to kill specified organisms
 - Level or percent of microorganisms killed when a product is used according to manufacturer's instructions.
- FIFRA compliance is good. Products described as disinfectants or sanitizers likely are registered.
- [EPA's Pesticide Product Label System \(PPLS\) database](#) list all registered products and their registration forms. Forms contain greater detail on product efficacy.

Tip: Use disinfectants or sanitizers which are registered to be effective against targeted pathogens.

Category B Disinfecting and Sanitizing Product Requirements

2. The District shall prioritize the purchase of disinfectants and non-food contact sanitizers that only contain the following active ingredients:

- a. Hydrogen peroxide or accelerated hydrogen peroxide
- b. Citric acid
- c. Lactic acid
- d. Caprylic acid
- e. Silver

Active Ingredient Background & Search Tips

- **Active ingredient:** Chemical(s) in disinfectants or sanitizers products that reduce or eliminate organisms of concern.
- Commonly used disinfectants and sanitizers contain active ingredients which can cause asthma, skin irritation or sensitization, and cancer.
- Product labels list each active ingredient and its concentration.

Active Ingredient Background & Search Tips

- Recommended active ingredients are proven to be effective against targeted microorganisms and are not known or suspected to cause negative health impacts associated with conventional products.
- Some recommended active ingredients have negative environmental impacts such as high aquatic toxicity and persistence in the environment.
- Recommended active ingredients were identified through a 2014 report prepared for the City of San Francisco, entitled, [Safer Products and Practices for Disinfecting and Sanitizing Surfaces](#). Performance and environmental and human health information on these active ingredients and information on products tested can be found in the report.

Cost, Performance, and Availability of Disinfectants and Sanitizers

- EPA FIFRA-registration ensures product performance.
- All pathogens of concern can be addressed by one or more of the recommended active ingredients.
- 38 disinfectant and 31 non-food contact surface sanitizer products that meet EPPS requirements and their efficacy information can be found in the [San Francisco report](#).
- Conventional disinfectants and sanitizers containing active ingredients such as quaternary ammonium compounds, typically are cheaper and more readily available.

Cost, Performance, and Availability of Disinfectants and Sanitizers

- Savings can be achieved through:
 - Implementing a disinfectant use policy so that cleaning with a general purpose cleaner is the first step and disinfectants only are used where needed.
 - Purchasing products in concentrated form.

Olmstead Medical Center Projected Annual Savings

\$ 10,000 - disinfectant use policy implementation and 63% reduction in surfaces disinfected.

\$ 7,000 – 7 min/room cleaning time reduction

\$ 6,700 - switching to green cleaning products and reducing number of cleaning products from 60 to 20.

\$ 1,900 - switching to concentrated cleaners and reusable bottles

> \$20,000 total projected annual savings.



Source: [Improving Cleaning Processes at Olmsted Medical Center. Jan. 2008. Minnesota Technical Assistance Program. Univ. of Minnesota.](#)

Category A, B, & C

Environmental Requirements

1. Cleaning, disinfecting, and sanitizing products shall include a Material Safety Data Sheet (MSDS) and product label with a list of ingredients and instructions for proper handling.
2. The product manufacturer or contractor shall offer training on the proper use of cleaning, disinfecting, and sanitizing products upon request.
3. Cleaning, disinfecting, and sanitizing products shall be ordered in concentrated form, wherever practical.
Concentrated cleaning products shall be packaged and designed to be used in a closed dilution control system that limits worker exposure to chemical concentrates while facilitating the proper dilution of chemical concentrates.

Ready to Use products are 15 times more expensive than concentrated cleaning products.



Concentrate



Ready to Use (RTU)

Source: [Espinoza, T., Geiger, C., and I. Everson. 2009. The Real Costs of Institutional 'Green' Cleaning.](#)

Concentrate

Background and Search Tips

- **Concentrate** refers to a product that must be diluted by water prior to its intended use.
- **Ready to Use (RTU)** refers to products that are designed to be used in the purchased form.
- Concentrated products may not be appropriate for every type of product, use, or application.
- **Ready to use** products should be purchased and used as needed.

Closed Dilution Control System

Purpose

1. Eliminate potential for exposure to the cleaning product in concentrated form thereby reducing the potential for accidents or injury; and
2. Ensure no more of the product is used than required to get the desired results.



Closed Dilution Control System Specification Language Tips

- Green Seal, EcoLogo, and DfE/Safer Choice include criteria for when a closed dilution control system is required as well as performance and safety criteria for the dilution control system.
- If specifying a concentrated product but not requiring an ecolabel, it is recommended that requirements for a closed dilution control system be added to the solicitation.



Optional Closed Loop Dilution Control Specification Language

1. The container must have 'spill resistant' packaging that requires coupling to a specially designed device in order to dispense the product.
2. The container may not be able to be 'practically accessed' during routine use. The package shall not allow for access or exposure to the concentrated product after opening a cap or lid, or before or while connecting to the dispensing system.
3. The container must contain a backflow prevention system that meets the current American Society of Sanitary Engineering (ASSE) 1055 standard.
4. Exception: Unless it is in a portion controlled package.

Category D: Miscellaneous Janitorial Supplies

1. Vacuum cleaners
2. Mops, cloths, and sponges
3. Protective gloves
4. Paper towels
5. Toilet paper
6. Trash bin liners
7. Recycling bin liners
8. Composting bin liners



Image courtesy of <http://biomasspackagingstore.com/>

Category D Miscellaneous Janitorial Supplies

Environmental Requirements

1. Vacuum cleaners shall have **high-efficiency particulate air (HEPA)** filters.

- HEPA filters prevent or reduce health problems such as allergies and asthma by trapping harmful particles such as dust mites and pollen.
- HEPA air filters are designed according to federal standards to remove 99.97% of airborne particles measuring 0.3 micrometers in diameter.



Category D Miscellaneous Janitorial Supplies Environmental Requirements

2. Microfiber mops, cloths, and sponges shall be purchased instead of cotton.

- Requires up to 95% less water and chemicals than conventional mops
- Traps dirt that cotton can't reach, and is lightweight/safer to use.
- Are more expensive at time of purchase but are cheaper from a total cost perspective.



Source: [US EPA. Nov. 2002. Using Microfiber Mops in Hospitals. Environmental Best Practices for Health Care Facilities.](#)

Microfiber Mop Savings Case Study

University of California Davis Medical Center, 2002

Costs per 100 Rooms Cleaned per Day		
Cost Types	Microfiber Mop	Conventional Wet Loop Mop
Mops	\$1.74 - \$3.48	\$.11 - \$.41
Labor	\$436	\$480
Chemicals	\$0.50	\$11.55
Water Use	5 gallons	100 gallons
Electricity Use (Washing)	\$30	\$5
Total cost	\$468	\$497

Source: [US EPA. Nov. 2002. Using Microfiber Mops in Hospitals. Environmental Best Practices for Health Care Facilities.](#)

Category D Miscellaneous Janitorial Supplies Environmental Requirements

3. Protective gloves shall **not** contain **PVC or vinyl**.

- PVC is made from vinyl chloride and a variety of additives that are included on California's Proposition 65 List of Chemicals Known to Cause Cancer or Reproductive Toxicity.
- Look for gloves made of latex or polyethylene (often called 'poly') as an alternative to PVC/vinyl.



Category D Miscellaneous Janitorial Supplies Environmental Requirements

4. Paper towels shall contain at least **40% postconsumer recycled content (PCRC)**.
5. Toilet paper shall contain at least **20% PCRC**.



Post-Consumer Recycled Content (PCRC) Background

- Postconsumer recycled content (PCRC) reflects the proportion of a product recycled from consumer materials that otherwise would have been disposed.
 - PCRC is often referred to as postconsumer waste (PCW)
 - Total recycled content and pre-consumer waste are not the same as post-consumer recycled content
- Recycled content logo is not required.
- Recommended PCRC levels match EPA's Comprehensive Procurement Guidelines and are regularly for federal procurements.



Searching for Post-Consumer Recycled Content (PCRC)



Compliance Standards :	Meets or exceeds all EPA Procurement Guidelines for post-consumer recycled content
Global Product Type :	Tissues-Bath Regular Roll
Tissue Type :	Toilet
Number of Plies :	2
Color(s) :	White
Length :	3 33/50"
Number of Sheets :	336 per roll
Width :	4 3/10"
Pre-Consumer Recycled Content Percent :	0%
Post-Consumer Recycled Content Percent :	60%
Total Recycled Content Percent :	100%
Special Features :	Individually Wrapped Roll

Category D Miscellaneous Janitorial Supplies Environmental Requirements

6. Trash bin and recycling bin liners shall contain at least 10% PCRC **or** have a thickness of less than 0.7 mil (17 microns).
- 10% PCRC option:
 - Is based on EPA's Comprehensive Procurement Guidelines
 - Utilized in Green Seal's GS-42 Janitorial Services Standard
 - Contributes to earning LEED v4 BOM green cleaning and materials credit.
 - Thickness of less than 0.7 mil option:
 - Is included in Green Seal's Janitorial Services (GS-42).
 - Increases product offerings for clear and smaller bags sizes.
 - Reduces amount of material used.

Trash Bin Liner Specification Tips

- Trash bags have one of three types of bottom seal: Star, flat, or gusseted. Star seal is best at minimizing bottom leakage.
- Trash bin liners are most often made from HDPE, LDPE or LLDPE plastic.
 - HDPE bags tend to be cheaper, thinner, and do not contain recycled content. HDPE bags should be fine when they hold non-sharp objects such as recyclables without glass.
 - LDPE or LLDPE bags tend to be more puncture and tear resistant and designed to be used to hold sharp objects or mixed waste trash that may contain sharp objects. LDPE or LLDPE bags tend to be more expensive, thicker, and can be found with post-consumer recycled content.

Trash Bin Liner Specification Tips

- Manufacturer web sites often have a chart that shows how the thickness of their bags relates to max dry load capacity.
- Please know the dimensions of the container and max weight of the material to be transported to buy the right size bag. Bigger, stronger bags tend to cost more.

Category D Miscellaneous Janitorial Supplies Environmental Requirements

7. Recycling bin liners shall be **clear, white, or natural** in color.
 - **Recycling bin liners** refer to bags used to collect, contain, and transport recyclable materials to a recycling facility.
 - The color assists the waste service provider in identifying which bags contain trash and which contain recyclables to ensure recyclables get recycled.

Category D Miscellaneous Janitorial Supplies Environmental Requirements

8. Composting bin liners shall be **Biodegradable Products Institute (BPI) certified** to meet the ASTM D6400 standard for commercial compostability of plastics.
- **Composting bin liners** refer to bags used to collect, contain, and transport compostable materials to a composting facility.
 - Examples of compostable materials include food waste and yard waste.
 - Composting bin liners should only be purchased if your facility has a composting program in place.
 - Note: DGS currently is purchasing all composting bin liners for composting pilots..
 - Please contact DGS or the Sustainable Purchasing Program if you have questions.





Thank You