Green Clean Program Resource Guide

Ontario Ministry of Education

March 2010

THE ASHKIN GROUP, LLC
The Green Cleaning Experts

PRICEWATERHOUSECOOPERS

Ministry of Education

Minister

Mowat Block
Queen's Park
Toronto ON M7A 1L2
Telephone (416) 325-2600
Facsimile (416) 325-2608

Ministère de l'Éducation

Ministre

Édifice Mowat
Queens Park
Toronto ON M7A 1L2
Téléphone (416) 325-2600
Télécopieur (416) 325-2608

Ontario

February 22, 2010

Dear Education Partners

I am pleased to announce that the Ontario Ministry of Education is the first province in Canada to develop a green clean program for publicly-funded schools. I encourage school boards to review this document and consider the numerous benefits associated with adopting and implementing a green clean program.

The purpose of the *Green Clean Program Resource Guide* is to encourage safe and healthy indoor ecosystems that support student learning and a healthy workplace environment by minimizing or potentially eliminating the use of non-green cleaning products in schools across Ontario.

The Guide sets out a comprehensive framework for a green clean program that is easy for school boards to adopt and includes:

- A board-wide environmental sustainable policy to support staff and students in implementation;
- The procurement of green products that are certified by either Ecologo or Green Seal;
- The implementation of alternative cleaning processes that either significantly reduce the amount of chemicals being used or introduce new technologies that result in more effective processes:
  - pilot programs to test new products or technologies in a limited number of schools before board-wide implementation;
- Formal evaluation:
  - product/process effectiveness; and,
  - cost/benefit analysis.

I would like to take this opportunity to thank the members of the Green Clean Working Group who have provided the Ministry with valuable advice and support.

I would also like to thank those school boards that had already implemented a green clean program and shared their experiences, best practices, and lessons learned with the consultant prior to the Guide being drafted.

Finally, I would like to thank the school boards and their schools that participated in the *Green Clean Program Resource Guide Pilot Program* and provided us with valuable insight into how to improve the draft Guide.

I encourage you to take the time to read the *Green Clean Program Resource Guide* and assess how it can assist your school or school board in creating a safe and healthy indoor ecosystem in which to learn and work.

Sincerely,

Leona Dombrowsky
Minister of Education

TABLE OF CONTENTS

INTRODUCTION **1**

EXECUTIVE SUMMARY **3**

1. STRATEGIC DIRECTION: CREATING A BUSINESS CASE FOR GREEN CLEAN IN SCHOOLS ... **6**

1.1. Why Adopt a Green Clean Program? 6

1.2. The Importance of Developing an Overarching Education Environmental Policy 8

1.3. How Green Clean Practices Promote Environmental Sustainability 8

1.4. How Can a Green Clean Program Impact a Sustainability Initiative? 9

1.5. Laying the Foundation of a Comprehensive Green Clean Program 9

1.6. Building the Business Case for Green Clean 11

2. OPERATIONAL FRAMEWORK: PRACTICAL CONSIDERATIONS FOR DEVELOPING A GREEN CLEAN PROGRAM **14**

2.1. Introducing Green Clean Products 14

2.2. Choosing Green Clean Products 15

2.3. Choosing Green Custodial Paper and Plastic Products 20

2.4. Adopting Green Clean Procedures 25

2.5. Ongoing Infection Control 26

2.6. Auxiliary Services 27

2.7. Partner with Your Vendor 31

2.8. Conducting Inspections and Reporting Findings 34

2.9. New Technologies 38

3. IMPLEMENTATION PLAN **40**

3.1. 10-Step Green Clean Implementation Plan 40

3.2. Formally Adopt a Green Clean Program at the School Board Level 40

3.3. Articulate a Green Clean Program as a Key Component of the School Board's Overarching Environmental Education Policy 41

3.4. Establish a Green Clean Team 41

3.5. Develop the Tools Required to Support Implementation 43

3.6. Dialogue with Existing Vendors 45

3.7. Work with the Board's Existing Product Selection Committee 45

3.8. Develop an Outreach Strategy for Frontline Stakeholders 46

3.9. Create a Communications Strategy to Promote Green Clean 48

3.10. Establish a School Level Implementation Plan 50

3.11. Measure and Monitor Progress 51

4. CULTURE AND AWARENESS: PEOPLE ENGAGEMENT 54

4.1. Building the Teams 54

4.2. Partner with Custodial Staff 54

4.3. Stakeholder Group Analysis 55

4.4. Promote Stewardship 56

APPENDICES

Things Custodians Should Know ..... A

Things the School Community Should Know ..... B

Summary of Lending Practices for Green Clean in Schools C

Guide to Evaluate a Green Clean Program ..... D

Pilot Reporting Template ..... E

Green Product Usage Data Template ..... F

Current State Analysis Lines of Inquiry ..... G

List of Product Types ..... H

Developing Green Clean Procedures I

Sample Forms ..... J

The Green Clean Standard Operating Procedures (SOF) Manual ..... K

The Green Clean Working Group L

School Boards That Shared Best Practices and Lessons Learned ..... M

Green Clean Program Resource Guide Pilot Program: Participating School Boards ..... N

Introduction

The Ministry of Education (Ministry) developed the *Green Clean Program Resource Guide* (the Guide) to provide a comprehensive tool to assist school boards that are interested in adopting a green clean program.

The project began in January 2009 and is guided by the Green Clean Working Group. The working group comprise of facility managers and procurement managers from select school boards, Ministry staff and CUPE representatives.

The project consisted of four phases:

Phase One: Sector/Stakeholder Input
Phase Two: The Draft Green Clean Program Resource Guide
Phase Three: Pilot the Draft Green Clean Program Resource Guide
Phase Four: The Final Green Clean Program Resource Guide

This document is the deliverable for Phase Four.

Reading Tip:

Use the Tip Boxes to help you select which sections of the Guide to read depending on your role within the school board.

Target Audience

The Guide is designed to be a comprehensive resource to assist school boards to implement a green clean program. As such, the target audience includes all stakeholders who can impact the outcomes of implementing a green clean program at their school or school board.

While each school board's approach to adoption and implementation will be different, the internal and external stakeholders will be the same. Internal stakeholders include decision makers, such as senior administrative staff, facility managers and school principals, and implementers, such as custodians, teachers and students. External stakeholders include vendors, parents and the broader community and key influencers, such as union representatives.

Within the Guide we have attempted to recognize the diversity of stakeholders' roles and level of interest in a green clean program by providing "tip boxes" on the side to indicate the relevance of a section for specific stakeholders.

Key Definitions

For the purpose of the Guide, the following definitions have been adopted:

Table 1: Key terms and definitions

Key Terms	Definition
Green Clean Program	The purpose of the Ontario Green Clean Program is to promote a high-quality, healthy indoor environment in Ontario schools for students, staff and other occupants through the use of effective, environmentally responsible, certified green products and cleaning processes.
The Green Clean Program Resource Guide (the Guide)	The Guide provides a standard of leading practices for the provision of environmentally responsible and effective cleaning management practices that Ontario school boards can adopt.

Executive Summary

The Guide is divided into four main sections.

- Section 1 – Strategic Directions, sets the foundation for why school boards should consider implementing a green clean program;
- Section 2 – Operational Framework, outlines some practical considerations for developing a green clean program and describes processes, such as selecting green clean products, vendors and other third party contractors;
- Section 3 – Implementation Plan, offers an easy 10-step green clean implementation plan; and
- Section 4 – Culture and Awareness: People Engagement, highlights the importance of change management and a comprehensive communications strategy as key success factors.

In addition, appendices contain quick guides for custodial staff and the broader school community. There are also useful forms, templates, checklists and a glossary of terms.

Four Ontario district school boards participated in a pilot program conducted between March 2009 and May in 2009 to evaluate the school boards' ability to implement a green clean program using a draft version of this Guide. The pilot school boards provided the Ministry with valuable feedback and helped define the key themes of this Guide. Among the key findings of the pilot program are the following:

1. A green clean program is a change management initiative

The implementation of a green clean program is significantly more than shifting from traditional cleaning chemicals to greener products or using new equipment; it is about adopting a new philosophy toward cleaning and asking stakeholders to change their daily behaviour.

Ultimately, the core of a green clean program is a change management process. School boards should use the principles of change management in the strategic planning and implementation of a green clean program.

2. Partnerships are critical to success

The pilot program demonstrated that engaging internal and external stakeholders early and developing strong partnerships with them, were critical in the successful adoption and implementation of a green clean program.

Using a partnership approach gives stakeholders a vested interested in the success of the initiative and ensures two-way communication assists in the immediate identification of challenges. It also builds a framework that encourages the affected stakeholders to find solutions that support the on going implementation of the green clean program.

3. Implementation of a green clean program is an evolutionary process

Implementation of a green clean program is a long-term evolutionary process. Whether implementation occurs at a school or school board level, it is important to emphasize the evolutionary nature of a green clean program to stakeholders as a way of setting realistic milestones and expectations.

The implementation of a green clean program is not black and white; instead it is about degrees of "greenness."

It takes time to identify and test green clean products and equipment that work at each site and phase out current chemicals and equipment, replacing them with effective greener alternatives.

It takes time for stakeholders to tangibly buy into the initiative through modified behaviours that support a green clean program.

The evolutionary process extends to the field of green cleaning.

As knowledge and technologies improve, new products and equipment are rapidly being developed to meet market demand. As a result, school boards will have to periodically re-evaluate their green clean program to ensure that they have kept pace with the evolution in the industry.

Summary of other observations from the pilot program

- All four pilot school boards indicated that the pilot program itself was a success and reported that they intend to expand their green clean programs by adding more certified green clean products and removing traditional products.
- Custodians reported that certified green products met or exceeded their overall expectations in terms of product performance and ease of use.
- The overall conversion to green certified products was reported to be cost neutral from a product cost and labour perspective.
- Certified green clean products are now widely available from vendors.
- School boards found that the total number of cleaning products used decreased because, often, a single green product can replace several traditional cleaning products.
- School boards reported that the adoption rate of certified green products increased during a relatively short span of time from 20% to 69% over two months.
- Partnering with local union representatives through an open dialogue meant support of the green clean program assisted in stakeholder buy-in.
- As with the transition to any new cleaning product, pilot school boards experienced some product performance issues – the resolution of these issues was assisted by partnering closely with the vendor community.
- Several custodial supervisors indicated they were pleasantly surprised at how the workload had remained comparable with traditional products.
- School boards reported that it was important to develop objective measures to assess product performance over time.

- The need for school boards to formally recognize schools for successfully implementing green clean was identified as an effective way to promote the program across the sector.
- School boards reported that it would be helpful to use visible signs to increase awareness of a green clean program among building occupants across pilot school sites.

Summary of implications from the pilot program

- In the event a product is not meeting performance expectations, school boards should have an objective protocol in place to manage product introductions and replacements.
- If a school board should decide to conduct a pilot program, schedule the pilot launch to accommodate as many stakeholders as possible.
- A school board should consider appointing a green clean champion as a formal role to promote adoption and drive the implementation plan.

1. Strategic Direction: Creating a Business Case for Green Clean in Schools

Who should read this?

All stakeholders, as this section presents the business case for implementing Program Green Clean.

The purpose of this section is to present a business case for implementing a green clean program in schools. There are four parts in this section:

i. the qualitative benefits of implementing a green clean program;

ii. the clear link between a school board's overarching environmental education policy and a green clean program;

iii. a description of how a green clean program supports long-term environmental sustainability; and

iv. a discussion of key financial and return-on-investment factors to be considered prior to implementing a green clean program.

1.1. Why Adopt a Green Clean Program?

There is a great deal of scientific evidence supporting the positive outcomes of green clean programs and associated improvements in indoor environmental quality. Specific regulations and standards for green clean products and programs exist and have evolved in both Canada and the United States, gaining validity across North America.

What is the impact of green clean on occupants?

"As Canadians, we spend close to 90% of our time inside; at home, at work and in recreational environments. Most people, however, are unaware of the effects that poor indoor air quality can have on their health."

- Health Canada

Common cleaning activities in a school result in the pouring, wiping and/or spraying of many different cleaning products that leave behind residuals of chemicals that may irritate building occupants. Using green clean products can significantly reduce the number and type of chemicals being used, resulting in a better, healthier environment for students and staff.

What is the impact of green clean on custodians?

The use of green clean products instead of traditional cleaning products means fewer chemicals are being used and the chemicals are more environmentally responsible. In addition, new technology means that more dust and dirt are being permanently removed through the cleaning process.

Custodians in the pilot program and in other existing green clean programs frequently report a noticeable improvement in the indoor air quality and experience better working conditions which they attribute to the green clean program.

What is the impact of a green clean program on facilities?

Typically, the impact of a cleaning product is judged on the appearance of the facility alone.

The choices made for cleaning products, procedures and frequencies have a tremendous impact on the life span of the materials used to build our schools. Cleaning products and the equipment that is used to clean a school can damage and prematurely age building materials, causing an unnecessary maintenance/replacement expense.

Key take-away

There are significant, positive health consequences on all school occupants from implementing a green clean program.

What is the impact of a green clean program on the environment?

There is a direct impact on our air, water and land, as every year, billions of litres of chemicals are used by the cleaning industry. Some of these chemicals are hazardous and can cause serious environmental damage. Many of these products are made from non-renewable natural resources, such as petroleum and, once depleted, will not be available to future generations.

With the use of green clean products, fewer chemicals are being used to achieve the same effect and the chemicals that are being used are less toxic to the environment.

In addition, a green clean program focuses on the total costs associated with equipment and encourages procurement policies that minimize the purchase of products/equipment that may be detrimental to the environment.

For example, a switch in paper towel from bleached, virgin tree pulp to unbleached recycled content will have a significant impact on the environment; or a vacuum cleaner that may be slightly more expensive but has a longer lifecycle and outperforms other options will reduce ongoing labour costs and replacement/disposal fees.

In addition, school boards often use cleaning products that contain harsh chemicals in ready-to-use (RTU) formats. These products have more packaging and require proper disposal of hazardous waste. In comparison, most green clean products come in concentrated solutions, in significantly less packaging, which reduces the quantity of waste and the labour required to properly dispose it.

A well-designed, implemented and monitored green clean program provides enormous opportunities for a school board to reduce its impact on the environment.

Should a school board adopt a green clean program?

In summary, yes – a school board should seriously consider adopting a green clean program. There is a great deal of evidence suggesting that green clean practices have significant, positive benefits on school occupants, the facility and the environment in general.

By adopting green clean practices, a school board can promote a high-quality healthy indoor environment in its schools with the least negative impacts on the buildings occupants and the environment. Furthermore, there is positive, long-term, financial business case to be made for adopting a green clean program.

1.2. The Importance of Developing an Overarching Education Environmental Policy

The Ministry, through *Acting Today, Shaping Tomorrow: A Policy Framework for Environmental Education in Ontario Schools*, stipulates that:

School boards will:

- *Develop or revise a school board environmental education policy that promotes environmental literacy and environmentally responsible management practices;*
- *Develop and implement a plan for integrating sustainable environmental practices into each of the school board's operational services; and*
- *Implement strategies, programs, and procedures to protect and conserve the environment, while ensuring that schools and workplace environments are safe and healthy.* (pp. 21)

When reviewing strategies 3.1 and 3.2, as outlined in the policy framework document, a school board should consider how a green clean program can be used to promote sustainable and responsible environmental practices.

Key Take-Away

A green clean program can provide the critical link to your existing sustainability initiative by promoting ways to:

- Use less toxic substances
- Responsibly use resources
- Create learning opportunities
- Stimulate community-wide discussions regarding environmental stewardship

1.3. How Green Clean Practices Promote Environmental Sustainability

Sustainability is typically defined as "meeting the needs of today without compromising the ability of future generations to meet their needs." Sustainability in a school means reducing its use of natural resources and its impact on climate change; reducing the use of chemicals and other products' impact on the quality of our air, land and water; and providing a healthy environment for all building occupants.

Adopting a green clean program is an ideal way to integrate long-term sustainable practices into a school's operations.

1.4. How Can a Green Clean Program Impact a Sustainability Initiative?

Strive to be toxic-free

In schools, sustainability is closely tied to protecting children's health. Reducing the use of unnecessary chemicals can promote a healthier indoor environment. While green chemicals are still a chemical and are not risk free, these products do have less potential to cause harm. Furthermore, by reducing the number of products and replacing the remaining products with greener alternatives a school board is making a positive step toward sustainability.

Use resources responsibly

A green clean program can impact the wise use of resources:

- purchase equipment that is energy efficient and requires less water;
- evaluate products based on how they are manufactured, distributed, packaged and delivered from an environmental perspective;
- select paper products with high post-consumer recycled content or made from rapidly renewable materials (such as bamboo or other grasses);
- select plastic liners with significant recycled content and ensure the liners are appropriately sized for the container and job; and
- develop a cleaning schedule that optimizes the balance between school hours cleaning (minimizing additional energy expenditures) and after hours cleaning (minimizing impact on students).

Teach, learn, engage

A green clean program in a school is a real-life example of how individuals can change their daily behaviours to support an environmentally sustainable initiative. Schools play a significant role in communities and, by engaging stakeholders, a green clean program can raise awareness of the environmental issues and provide solutions that can be integrated into individuals' home life, both today and for generations to come.

1.5. Laying the Foundation of a Comprehensive Green Clean Program

Key take-away

The seven operating documents serve as the critical link between the strategic vision and the day-to-day implementation of a green clean program.

Comprehensive green clean programs have formally documented procedures and practices that lay out the foundation for the initiative and link back to a school board's environmental education policy. The following section outlines seven supporting documents that constitute the key components of a comprehensive green clean program.

a. A green clean standard operating procedures manual

This document at a minimum should describe the school board's expectations for green clean operational procedures in schools. It should include standard procedures, such as product chemical evaluation, equipment evaluation, procurement protocols and procedures for dealing with vulnerable populations. Most school boards already have comprehensive procedures supporting the above topics; therefore school boards should modify existing procedures to include green clean practices where appropriate.

b. A green clean site plan

A green clean site plan should align the principles of the green clean standard operating procedures manual with the unique needs and goals of a specific school. The practices expressed in the manual are applied to the specifications of each school. Procedures are refined to meet the needs and unique challenges. Specific products, equipment and supplies used in the school are identified and their use, maintenance and disposal are tracked.

c. Records of cleaning chemicals, supplies and equipment

The school board should develop a formal record of all cleaning chemicals, supplies and equipment. This could be as simple as a spreadsheet. At a minimum, this record should describe the type, brand and technical specifications of the cleaning chemicals, supplies and equipment that are in use at the school board's facilities and be maintained on an ongoing basis.

d. Equipment maintenance logs

Reference

- Appendix E – Pilot program reporting template
- Appendix F – Green product usage data template
- Appendix J – Sample forms.

Equipment maintenance logs document the equipment in the facility, track its state of repair and indicate when it needs to be replaced because it is no longer effective. In most cases, a simple spreadsheet or form will work, but a school board needs to ensure that the records are easily accessible and maintainable over time.

These records are also an important part of various certification submittals.

e. Training records

A training record will ensure that all custodians have received training on the proper use of the green clean products and equipment that they use. Training records are also useful in planning training for new staff or identifying training needs when staff move from one school to another where different equipment may be used.

f. Regularly documented reviews of the cleaning activities in the school

Ideally, a review is a co-operative effort between the administration and the custodial team.

Regular reviews of cleaning activities, with a focus on green clean practices, should be conducted at each school. The goal is to ensure that the activities outlined in the green clean standard operating procedures manual are being carried out, identify

challenges to the implementation of the programs and celebrate success stories or promote best practices that can be shared with other schools.

Reviews should be conducted by the custodial manager and a representative from school board administration. It is important to guard against falling into patterns for these reviews. Vary the areas that are reviewed, vary the day of the week and time of day and vary the people that are spoken to along the way.

Reference

3.8 Develop an Outreach Strategy for frontline stakeholders
3.9 Create a Communications Strategy to promote Green Clean

g. Comprehensive communication program

A communications program is a critical component in the successful adoption of any green clean program. It will be described in greater detail later in the Guide. Since the core of a green clean program is a change management initiative, each school board is encouraged to develop a strong communications strategy to support the green clean program and build stakeholder buy-in for the initiative.

Communications strategies should:

- demonstrate senior management's strong support for the initiative;
- have a long-term approach that recognizes the evolutionary nature of a green clean program and the need for continuous, ongoing promotion of the initiative; and
- build partnerships between the administration and stakeholder groups, such as custodians, to encourage ongoing buy-in.

1.6. Building the Business Case for Green Clean

Key take-away

There are widely recognized industry standards for green clean products that provide assurance for purchasing managers.

The two key certifications are EcoLogo (Canadian) and Green Seal (American).

While there are many reasons to adopt a green clean program, for a school board, an important question is: Does a green clean program make business sense?

Standards

Until recently, finding effective green cleaning products could be difficult. Today, every major manufacturer of cleaning products has a green clean product line.

EcoLogo and Green Seal are two generally accepted standards that are useful in identifying certified green clean product choices. Both standards have been adopted across North America and are interchangeable.

EcoLogo - A cleaning product that contains this logo has gone through a certification program to ensure it is green. EcoLogo was founded in 1988 by the Government of Canada.

Green Seal – A cleaning product that contains this logo has gone through a certification program to ensure it is green. Green Seal is a United States not-for-profit organization devoted to environmental standard setting, product certification and public education.

Performance

Key take-away

Certified green clean products perform as well as or better than the traditional products that they are designed to replace.

When green clean products were first introduced to the marketplace a couple of decades ago, many did not perform as effectively as the traditional products that they were intended to replace. However, as the general public has become far more conscious of the virtues of environmental protection, the concept of green clean has become part of the mainstream. Market demand has driven manufacturers to invest in research and development of green clean products.

Today, virtually every major manufacturer of cleaning products has at least a basic line of certified green products available for sale.

As a result, a school board now has a broad choice of cost-competitive green clean products that perform as well, or better than the traditional products that are being used.

Across North America, the cleaning industry is being transformed as green clean products and new technologies/equipment revolutionize the business of cleaning.

All pilot school boards reported favourable experiences regarding the performance of green clean products. Custodians' experiences at the 16 school sites have generally been positive and many have reported noticeable performance and health benefits associated with the green clean products used during the pilot program.

Not all green clean products are equal. If a product does not meet performance expectations, there are alternative green clean products that will meet your needs.

Costs

Key Take-Away

Switching to green clean products is generally a cost neutral exercise even after considering the cost of labour, which typically constitutes the lion's share of the true cost of cleaning.

Financial cost is a key consideration in introducing a green clean program. Three cost areas have been evaluated in putting together the business case for creating a green clean program: product, labour and training. Ten to 15 years ago, most green clean products carried a significant cost premium. The number of manufacturers that are now producing a line of green clean products has made the marketplace competitive. As a result, the cost premium for green clean products has been greatly reduced or eliminated.

From a strictly product cost perspective, green clean products can be considered "cost neutral" – some may cost a bit more, and others a bit less. The pilot in Ontario schools confirmed this observation.

However, the cost of cleaning products represents only 5%-10% of a school board's cleaning budget, while labour represents 90%-95% of the total cost. From a labour cost perspective, a green clean program can also be considered to be cost neutral – some products take a bit more effort to use, while others are more efficient and require less effort. Again, the pilot program in Ontario schools confirmed this observation.

In summary, the pilot program in Ontario schools has indicated that the financial case for adopting green clean products is strong. Although no empirical study has been conducted, the experience of the pilot school boards and other Ontario school boards that have already implemented a green clean program indicates that converting to green clean products is a cost neutral exercise.

The business case

Key take-away

The business case for implementing a green clean program is clear.

School boards should take concrete steps to implement a green clean program as soon as possible.

For school board administrators, the business case for adopting a green clean program is clear:

- green clean products are as effective or better than traditional products;
- widely recognized certification standards allow each school board to procure a broad array of green clean products with confidence in their environmental claims; and
- the financial return on investment analysis can be expected to be a cost neutral exercise.

When a school board combines the above business considerations with the potential benefits of improved indoor air quality and reduced environmental impact, previously discussed, it is clear that a school board should consider implementing a green clean program as soon as possible.

2. Operational Framework: Practical Considerations for Developing a Green Clean Program

Who should read this?

Planners and managers should read this section – senior administration, facility and operations managers, custodial supervisors, school principals.

Use this section to help with due diligence or pre-implementation planning.

This section outlines a practical operational framework for involving stakeholders in the planning and design of a green clean program.

2.1. Introducing Green Clean Products

Each school is unique in the building materials that were used to build it. As a result, there is no single answer to what cleaning products will work in a facility.

The principles set out in this Guide are designed to assist a board in the decision-making process of developing a green clean program.

Common Myths

Myth 1: Green products do not work

Green clean products have gone through an evolution, from being a special interest product on the fringe of the cleaning industry, to being a mainstream product line for every major cleaning product manufacturer. At one trite in time, the effectiveness and the environmental friendliness of green products might have been questioned; however, today effectiveness is vital to a manufacturer's market share in a competitive industry, and third party entities, such as EcoLogo and Green Seal objectively verify and certify cleaning products based on their raw materials and packaging.

Myth 2: Green products are more expensive

Not too long ago, manufacturers charged a premium for green clean products that actually worked. However, the increasing number of manufacturers offering green clean products has resulted in a much more competitive marketplace where the cost of green clean products is comparative to traditional cleaning products.

Many Ontario school boards with a green clean program in place report that the overall conversion to green clean products is cost neutral.

Myth 3: All green products are identical

Each green clean product is made from a series of chemicals that interact with each other and the building material that needs to be cleaned. As a result, each product, based on its composition and the building material it is being used on, will work slightly differently.

When introducing a new green clean product to a school, a school board should implement it in a limited area to assess its effectiveness and identify any potential issues prior to school-wide use. In the event that a green clean product does not perform as expected, a school board should investigate other green clean products that might be a better match.

2.2. Choosing Green Clean Products

Major certification programs: EcoLogo and Green Seal

As outlined in Section 2, EcoLogo and Green Seal are widely accepted certification programs that evaluate green clean products. EcoLogo is the Canadian standard. Green Seal is the American standard. The two organizations have comparable criteria.

By purchasing green clean products that have been certified by either EcoLogo or Green Seal, a school board is assured that these products have been thoroughly evaluated and their environmental claims confirmed.

Major traditional product categories

There are specific EcoLogo and Green Seal certification standards for different product categories:

- All-purpose cleaners
- Glass cleaners
- General purpose cleaners
- Washroom cleaners (non-disinfecting)
- Floor care products (finishes and sealers)
- Floor care products (strippers)
- Carpet care products (shampoo and extraction)
- Degreasers
- Hand soaps
- Odour control products

Practical tip

Procure products with proven certifications – EcoLogo or Green Seal.

Green clean products

As science reveals the direct link between certain chemicals and an elevated risk of negative consequences for the user as well as the environment, manufacturers are increasingly creating new products and applying new technologies to the business of cleaning.

Green clean products have considerably fewer harmful ingredients that affect human health; are rapid-biodegradable and non-toxic; perform as well as, or better than, comparable non-green products; and do not contain hazardous by-products.

In comparison, many traditional cleaning products are derived from petroleum, a valuable but limited and non-renewable natural resource.

Green clean products also contribute to a more sustainable future. Look for concentrated versions of products as they have clear advantages over their counterparts. Based on usage, concentrated products impact the environment less as less packaging requires less transportation and disposal.

Floor care products

What differentiates green floor care from general cleaners is that green floor care is a cohesive *system*, not a collection of individual products.

Many traditional floor care products contain heavy metals such as zinc, phthalates, solvents and flourosurfactants, which have improved the application process and the performance of modern finishes. Unfortunately, research indicates that these ingredients raise health and environmental concerns.

Today, there are green alternatives that protect the floor, provide effective slip resistance and maintain its appearance

The most important step in designing a green floor care program is to implement a floor care program that reduces the frequency of burnishing, buffing, recoating, as well as stripping and refinishing. Typically, green floor care systems are designed to work most effectively as a system, by matching the green floor finish with the corresponding green stripper and the suggested cleaner and/or maintainer a board.

Other ways to significantly reduce the environmental impacts of floor care are to determine if the frequency of stripping and recoating can be reduced from multiple times a year to once a year, or even, once every two or three years; or to reduce/eliminate burnishing the finish, as this is an abrasive process that creates a tremendous amount of fine dust.

In addition a school board could consider including effective matting, microfibre mops and vacuum attachments for any powered equipment as part of a green floor care program.

Disinfectants and sanitizers

Disinfectants do not clean. Technically, there is no such thing as a “certified green” disinfectant or sanitizer. Disinfectants and sanitizers are specifically designed to kill living organisms and/or prevent them from reproducing and, as a result, are potentially harmful to the people who use them or come in contact with them. Choices for these products should be governed by applicable laws and regulations as well as by choosing the product that meets the needs with the least potential impact. All disinfectants must be used according to label instructions to ensure efficacy as well as safety.

While disinfectants and sanitizers are an important part of any cleaning program, a school board should consider the following in creating an effective green disinfectant strategy is to:

- use disinfectants or sanitizers only where appropriate. There are growing concerns that they are being overused and, in extreme cases, can contribute to the creation of more resistant bacteria, known as “super bugs”;
- use the right disinfectant or sanitizer for the job;
- choose the product with the least impact on health and the environment;
- use the correct dilution and follow the manufacturer’s instructions, especially, dwell time; and
- partner with your vendor to identify where the use of disinfectants or sanitizers are appropriate and to find greener alternatives to traditional choices.

Practical tip

In addition to replacing toxic chemicals with greener, environmentally responsible products, a school board should consider reducing the need to use chemicals in the first place.

Each school boards should consider opportunities to reduce the use of disinfectants and sanitizing products where possible and replace with a detergent-based cleaner that can equally remove the soils and harmful organisms. The objective is to create a clean surface free of potentially harmful bacteria or other organisms with an effective green clean product and use disinfectants and sanitizers only in areas of increased risk.

School boards should consider replacing the following common traditional products with alternatives that have less impact on the environment and less risk to human health:

- Sodium hypochlorite or chlorine bleach. It is extremely effective against harmful organisms. However, it is corrosive to eyes and skin, a known respiratory irritant and, if accidentally mixed with other common cleaning products, will produce a poisonous gas;
- Phenol-based disinfectants. While commonly used to combat blood borne pathogens, research indicates it is a major organ toxicant, can be corrosive to eyes and skin, and can potentially damage floor finishes and other surfaces; and
- Quaternary ammonium compounds (quat-based) disinfectants and sanitizers. Many school boards currently use a wide array of quat-based products for disinfecting; however research indicates that quats are toxic to aquatic life and, when used as the active ingredient in a disinfectant, may have an extreme pH, which can cause eye and skin irritation and/or be high in volatile organic compounds (VOCs) due to the addition of fragrances, which can cause respiratory irritation.

As an alternative to the above, a school board may consider products with hydrogen peroxide concentrates of less than 4%. These products have an improved health and environmental profile compared to most other disinfectants and sanitizers. However, these products are typically sanitizers and not disinfectants and may not be appropriate in high-risk applications. They may be preferable in many general applications where a sanitizer would be more suitable as compared to a detergent-based cleaner such as surfaces that are frequently touched or as an added safeguard around occupants with diminished immune systems.

Hand cleaning products

An effective hand washing program is one of the best ways to protect the health of building occupants. When choosing a hand cleaning product, consider the following:

- match the cleaning product to the types of soil it will remove. For example, the soap in a high school technical shop class might be different from that used in an elementary school restroom;
- the soap should lather well without requiring excessive application. Foaming soaps deliver lather equivalent to traditional hand soaps with 50% less product dispensed;
- the soap should not irritate the users' skin;
- the soap should have no fragrance or dye (if possible); and
- dispensers should be easily filled or equipped with replaceable cartridges.

Practical tip

Removing and killing harmful organisms are two different concepts. Understanding the difference between the two will help determine which tactic to use.

The use of anti-microbial hand cleaning products should be restricted to high-risk areas such as laboratories and food preparation areas. The purpose of hand washing is to remove harmful organisms; once they are removed they do not need to be "killed".

Cleaning chemicals not covered by certification programs

While the green clean industry is evolving at a rapid pace, there are still some categories of products, such as drain cleaners, furniture and metal polishes, concrete and other heavy-duty cleaners, that are not covered by certification programs.

For these categories, a school board should evaluate the attributes of each green clean product and select the one that will accomplish the task with the lowest level of potential risk and is the least harmful for indoor use.

Product attributes that a school board should consider:

- **pH level**
  It is better to select a product with a moderate pH (around 7) rather than an extreme pH (greater than 9) as it lowers the risk of skin/eye irritation.
- **Chemical composition**
  Does a product contain chemicals that are known to be respiratory irritants or neurotoxicants?
- **Raw materials**
  Is a product made from non-renewable natural resources, bio-based products or derived from a rapidly renewable agricultural product?

For these specific product categories, consider the following:

Table 2: Possible green alternatives to other product categories

Other traditional product categories	Possible green alternative
Drain cleaner	Enzyme-based maintainer
Metal and furniture polish	An emulsion containing natural oils and surfactants
Heavy duty cleaner/degreaser	Citrus- or soy-based solvents, detergent-based cleaners and enzyme-based cleaners
Graffiti Removers	One with a moderate pH, soy or other bio-based product, with none of the following ingredients: methylene chloride, petroleum distillates, propane, butane, isobutene, or sodium hybrodixde

It is also important to consider the volatile organic compound (VOC) content when looking for products that do not fit in categories certified by organizations such as EcoLogo or Green Seal. A school board should work with its vendor to identify suitable VOC guidelines.[1]

Emerging Technologies

The following are some emerging chemical technologies that a school board should discuss with its vendors and consider testing:

- bio-based products made from rapidly renewable natural ingredients, such as corn, soy, sugar beets and citrus fruit;
- bio-mimicry is a concept based on the design of products, which mimic how nature eliminates soils and waste, for example, using bacteria to digest organic materials such as fats, oils and solvents; and
- disinfectants and sanitizers made from plant-derived essential oils.

[1] The California VOC Guidelines http://www.cal-iaq.org/VOC/VOCexec.PDF are commonly used by vendors in North America.

2.3. Choosing Green Custodial Paper and Plastic Products

Did you know?

Recycling is a critical piece of implementing the green clean program.

A green clean program is significantly broader in scope than the substitution of green clean products for traditional ones; it encompasses an environmental perspective on related issues such as custodial paper (toilet paper and paper towel) and plastic products (garbage bag and bin liners).

Paper products with significant recycled content have become more widely available. Virtually every major paper vendor has a good range of paper with recycled content. This has been a relatively new development and is a rapidly growing segment. Recent developments include products that are made from rapidly renewable resources such as bamboo and grass.

Each school board should consider minimizing its environmental impact by maximizing the recycled content in the products it uses.

Recycled content

Each school board should evaluate a product's "total recycled content" and "post consumer content." When choosing green custodial paper, use the following guidelines:

Toilet paper – post-consumer content from a minimum of 20% to 60%
Facial tissue – post-consumer content from a minimum of 10% to 15%
Hand towels – post-consumer content from a minimum of 40% to 60%
Industrial wipes – post-consumer content from a minimum of 40%

In addition to the post-consumer content, a school board should also consider the quality of the product. It should be noted that there is not a direct relationship between the amount of post-consumer or total recycled content and product quality.

Bleached products

Most paper products are bleached to make the paper white. The traditional bleaching process uses either chlorine or chlorine compounds, such as chlorine dioxide. There are an array of health and environmental concerns associated with use of both chemicals.

When choosing green paper products, a school board should evaluate the chemicals used in the production process or look for products that are certified by the Chlorine Free Products Association. The Processed Chlorine Free (PCF) emblem is the only certification mark in the world that clearly identifies:

- that no chlorine or chlorine compounds were used in the paper making process;
- that all virgin components need to be certified as totally chlorine free and require a chain of custody for all fiber;
- how the mill determined post-consumer content;
- that the mill has no current or pending violations;
- that the mill does not use old growth forest for any of the virgin pulp;
- that the mill is provided with recommendations on product quality and increased productivity; and

- that the product contains at least 30% post-consumer content.

Forest Stewardship Council (FSC)

FSC certified papers contain wood fibre from well-managed forests, post-consumer recycled content or a combination of these factors.[2] When choosing green paper products a school board should look for the FSC logo.

Paper towel dispensers

The style of paper towel and type of dispenser used can have a significant impact on paper usage, waste, health and costs. When choosing a paper towel dispenser, a school board should consider the following:

- hands-free paper hand towel dispensers cut down the number of germs that are passed from person to person;
- reducing packaging waste by using large rolls of toilet paper. This will reduce the number of times rolls are changed, the number of complaints related to dispensers being empty, and associated labour; and
- replacing C-fold towel dispensers with hands-free roll towel products and dispensers. This will eliminate waste, reduce costs (less paper is bought) and associated labour (to restock the dispensers).

Aschool board's green clean product selection committee should consider the cost of changing dispensers as part of the evaluation process. A school board should consult with its vendor about ways it can assist with change over costs.

Garbage receptacles and plastic liners

Practical tip

Use the same size garbage can throughout a school to standardize liners and maximize cost savings from procurement to training.

To support a green clean program, a school board should consider the following issues to eliminate waste and minimize the environmental impact:

- standardize the size of the garbage can. If only one size is purchased, then only one type of liner is required;
- ensure that the liner fits the garbage can perfectly and is not too small or too large. This is commonly known as "right-sizing" and minimizes waste; and
- use biodegradable plastic bags instead of liners made of virgin materials.

Biodegradable plastic bags

Did you know?

Conventional, non-biodegradable plastic bags can literally take hundreds of years to decompose.

There are two types of biodegradable plastic "hydro-biodegradable" and "oxy-biodegradable."

Hydro-biodegradable plastic bags are made from crops such as corn, and potatoes and break down in most conditions.

Oxy-biodegradable plastic bags are commonly used in Ontario's schools. They are similar to regular plastic bags but contain additives that help the bag disintegrate over a period of time when exposed to light and air.

[2] Forest Stewardship Council: http://www.fsccanada.org/paperproducts.htm

Choosing green equipment and supplies

Unlike cleaning chemicals, there are few established performance standards for choosing green cleaning equipment. However, a school board can use the following guidelines to make more informed decisions.

Appropriateness

Appropriateness means matching a tool to the job it is to perform.

When assessing the appropriateness of a piece of equipment, a school board should refer to the physical characteristics and cleaning requirements of each facility.

The green clean site plan (page 13) developed for the site contains the baseline data that identify the unique cleaning characteristics of the spaces and flooring surfaces and the analysis that will assist staff in choosing the right equipment for the job.

Practical tip

In many school boards, a product evaluation committee, or similar team, would likely have developed existing product selection criteria.

Work with your team to modify existing evaluation criteria and incorporate green clean concepts.

This way, it is far easier to launch a green clean program than to start from scratch!

For example, a school board when procuring a new vacuum cleaner might consider the following:

- using a 31 cm (12-inch), single motor upright vacuum to clean a 1,000 m^2 auditorium is a losing proposition regardless of the vacuum cleaner's performance or cost; and
- using a 107 cm (42-inch), area vacuum to clean a crowded classroom is a losing proposition regardless of the vacuum cleaner's performance or cost.

Effectiveness

Effectiveness is the ability of the equipment to perform the function required without reintroducing more contaminants to the area.

Vacuum cleaners:

When purchasing new equipment, a school board should consider the following:

- ability to capture the soil;
- ability to retain the dust after it has been vacuumed;
- the Green Label Program, developed by the Carpet and Rug Institute indicate that the product has met minimum standards in the collection and retention of soils and dust; and
- partner with your equipment vendor to identify green certified equipment and arrange to test/pilot. The pilot program clearly illustrated that vendors contribute by identifying new equipment and supplies, resolving product usage problems, and enabling custodians through proper equipment training and guidance.

Carpet extractors:

When purchasing new equipment, a school board should consider the following:

- ability to remove the soiled water from the carpet or upholstery; and
- the carpet should be dry within 24 hours of use for the following reasons:
  - a wet/extra damp carpet is a safety hazard, as you step from it to a hard floor, there is the potential for a slip fall incident;
  - wet/damp carpets and upholstery are breeding grounds for bacteria, mould and fungi. The faster the fabric dries, the less opportunity there is for substantial growth.; and
  - any moisture left in the fabric is, by definition, dirty as soils become emulsified and suspended in the water. If the water is not removed, neither is the soil.

Automatic scrubbers:

When purchasing new equipment, a school board should consider the following:

- Equipment should be designed to minimize the amount of water and chemicals used and to maximize the amount of water recovered. New technologies use foam or micro fibre pads that require both water and chemical consumption. An effective squeegee design helps recover more water and prevents “trails” that need to be hand-mopped. This avoids potential slip-fall incidents and improves productivity. The equipment should be able to fit through the doorway of the room it is being used to clean.

When purchasing new equipment, a school board should consider the following:

- burnishing is an abrasive process, like sanding, that creates a tremendous amount of dust. If the dust is contained and captured during the burnishing process it significantly reduces the quantity of dust entering the school; and
- including passive dust control or, preferably, active vacuum attachments to capture fine particles and prevent them from being inhaled.

Usability

Usability focuses on the ergonomics, ease of use, training required and availability, durability and reparability of the equipment.

When purchasing new equipment, a school board should consider the following:

- If a custodian finds a piece of equipment uncomfortable or hard to use; or it constantly breaks down, it will not be used by the individual;
- Equipment should be sized to the user as well as the task performed and matched to the individual who will use it. Custodians can provide valuable input into the selection of equipment during the procurement process, and a school board should ensure that custodians have a voice in the selection process;
- How difficult is the equipment to operate or maneuver? Do not be misled by marketing productivity claims. Test the equipment being considered in a pilot school to asses potential issues and productivity before purchasing

decisions are made. The pilot program illustrated how important it is for a school board to field test equipment on a trial basis before committing to a full rollout to all schools;

- Can an average user figure out how to use the equipment with minimal instruction? Are the labels clear, do they use icons or colours as cues? Is there a “panic” switch to protect the user or passersby? Are there additional staff considerations such as English as a Second Language or literacy issues?
- What training materials and vendor support are available for the equipment? How much time is required to train staff on the equipment? Is the training icon or colour-code based; available in languages other than English?; and
- What is equipment’s service record? How long has it held up in similar situations to those found in your schools? If it is a new technology or design, what is the manufacturer’s track record with other products? What is the warranty? What is the availability of parts and service in your area?

Practical tip

When testing new products, always start with a small area with low traffic/activity levels.

This will allow for an assessment of whether the product meets expectations.

Other green equipment and supplies

The evolution of the green clean industry is also impacting cleaning equipment manufacturers as they invest research and development into greener equipment based on new technologies.

Green equipment will continue to evolve as newer technologies become available; however, the following are some of the latest new developments:

- self-contained cleaning equipment, including a high pressure washer with a wet/dry vacuum that reduces chemicals and makes cleaning in bathrooms faster and more efficient;
- vapor cleaning devices may be a good alternative to chlorine-based chemical cleaners for removing mould and mildew or floor-stripping compounds;
- post-consumer recycled content in plastic carts, buckets, wringers, mop handles and other tools;
- polyvinyl chloride-free (PVC) entryway mats that are properly sized and designed for seasonal conditions;
- alternative products, such as microfibre cloths that can be used with virtually no water, chemicals or squeegees for cleaning glass and mirrors;
- microfibre products capture more dust, last longer and require no treatment other than washing. Cloths can be used for hand dusting, replacing traditional rags and furniture polish; mops can be used for floor dusting, and some manufacturers offer micro fibre pads for floor machines that can be used on either hard or carpeted floors; and
- plumber’s snakes can dislodge clogs in drains just as effectively as pouring concentrated acids down the drain but with significantly less environmental impact.

In summary, as a school board’s green clean program evolves over time, it should replace old and broken equipment with greener choices. A little research and some planning on how and who will be using the equipment will ensure that it is appropriate, effective and properly used by staff for the best cleaning results.

2.4. Adopting Green Clean Procedures

The procedures in a green clean program are not intended to be a "one-size fits all" approach. Each school will have specific procedures based on the baseline analysis and priorities established by your school board through each facility's green clean site plan. Typically, most green clean site plans consider procedural issues in three categories:

Practical Tip

Simple procedural changes, such as changing to micro fibre dust mops and changing the sequence of tasks, can go a long way to achieving your green clean vision.

1. Reduce general health impacts

Replace treated (often improperly prepared) dust mops with backpack vacuums with micro-filtration bags or microfibre dust mops.

Backpack vacuums are more efficient than upright vacuums, cover larger areas, tend to be less labour-intensive than dust-mopping solutions, and the micro-filtration bags do a much better job capturing and retaining the small particles.

Micro-fibre products require no treatment, can be laundered hundreds of times (versus a few dozen for traditional dust mops) and are proven to capture and retain up to 98% of the dust particles.

The overall impact is significantly fewer particles are reintroduced to the classroom as a result of the cleaning process, minimizing the quantity of cleaning required in the future and improving indoor air quality for all occupants.

Minimize the quantity of chemicals and VOCs that are introduced into the air by either applying furniture and metal polishes directly into the cleaning cloth instead of spraying the surface of the object being cleaned; or using microfibre cloths, which can be used without any additional cleaning product for many furniture and metal polishing operations.

2. Accommodate Populations with Special Needs

Evaluate potential changes that can be made to accommodate individuals with special needs by partnering with the site's custodians and individuals who have self-identified a special need to find the best ways to minimize on health the impact of cleaning.

Some options include:

- re-evaluate products to identify a product that effectively does the job with the minimum impact on sensitive individuals; and
- temporarily move individuals with special needs to another area of the building if work cannot be rescheduled or postponed.

Assess the cleaning schedule to determine if changing the time of day when the area is cleaned would make a difference to the affected individual. For example, to allow the greatest amount of time for the area to be "flushed" with fresh air, the area could be cleaned immediately at the end of the school day and major cleaning could be conducted on Fridays or before holidays.

3. Reduce environmental impact

In addition to using green clean products to reduce the environmental impact of cleaning, a school board can consider methods to reduce the quantity of chemicals that are being used and implement alternative cleaning methods.

Reduce the quantity of chemicals used:

- apply the cleaning chemical to a cloth instead of spraying onto the surface to be cleaned;
- eliminate the use of aerosols; instead, use trigger sprayers that apply the material in larger drops; and
- minimize the use of poisons for pest control purposes by:
  - improving cleaning procedures around food areas, such as kitchens, break rooms and recycling areas to eliminate the food sources that attract the pests in the first place; and
  - creating an awareness program and partner with students to eliminate food being left in other areas, such as student lunches left in lockers overnight or for days; or treats left in classrooms; and
  - assessing the school to identify ways that pests can enter and live undetected above ceilings and in walls.

Alternative cleaning methods

- Use effective entryway mats to capture dust and dirt before it enters the school
- Vacuum hard floors instead of mopping as it will reduce the need to scrub and recoat or strip and refinish the floors and extend the life of the finish;
- Use metal-free floor finishes
- Select burnish-free floor finishes that can reduce the dust and contaminants introduced into the air

2.5. Ongoing Infection Control

Infection and pandemic control are major concerns for everyone. A school environment poses its own set of unique challenges as children/touch, smell and sometimes taste just about everything. Then germs are quickly transmitted from their hands to their mouths or to their friends.

In Ontario, pandemic plans are prepared by each school board with the assistance of their local public health unit. A well-designed green clean program should complement the efforts of the school board's infection control and pandemic plans and be shared with the local public health unit.

A school board should develop a strong partnership with its local public health unit and develop communications strategies to educate and inform students, staff and parents on preventative measures and school protocols in the event of a pandemic.

A school board should also develop and implement an effective disinfection plan in partnership with its local public health unit. In particular, school board should:

- use the disinfectant appropriate for the task - hospital grade products are not required for restroom cleaning;
- only use disinfectants where they are required. Use good cleaning practices for the other areas; and
- use the disinfectant *exactly* as indicated on the label. These are highly regulated products, the user instructions are designed to ensure they do what they were designed to do. Deviating from these instructions will reduce the efficacy. Note: Many disinfectants require the surface be pre-cleaned before application and that the surface remain wet for five to ten minutes.

2.6. Auxiliary Services

Managing third party green clean contracts

If a school board requires third party contractors for cleaning services, administrators should ensure that the philosophy and principles of a green clean program are implemented as consistently as possible across all custodial services.

A school board should aim to align the methodologies and certified green clean products used by school board custodial staff and any third party contractor as much as possible. If a high level of consistency or alignment is not deemed possible, a school board should consider the option of bringing the cleaning work in-house to be done by its custodial staff.

A school board should be prepared that strict compliance to the green clean program may not be possible, as some third party cleaning contracts are for auxiliary service areas, such as daycares or food service areas, which have legislative requirements that stipulate exact cleaning standards (e.g. the use of bleach in specific areas) which are not considered to be “green.”

- Existing contracts
  - Inform contractors of the school board’s decision to implement a green clean program; and
  - Amend existing contractual terms to meet the requirements of the school board’s green clean program.

- Procurement of a Green Clean Contractor
  - There are two processes that can be used to ensure that prospective contractors understand your school board’s green clean requirements and are qualified to deliver them.

1. **Develop, distribute and evaluate a Request for Information (RFI) from your potential service providers**

   Many procurement managers feel that it is either unnecessary or that information is simply not available to them regarding potential service providers and, therefore, they do not engage in the RFI process. However, without going through a pre-qualifying process, there is a potential risk of engaging in a bid process with vendors who may not be capable of providing adequate green clean services. While the RFI may add a week or two to the process, the result may add years to a successful contract relationship.

   The purpose of the RFI is to understand the depth and breadth of the skills and services to be provided by the contractor. In order to gather the information needed, the type of questions that are asked should be carefully crafted to ensure honest and clear answers.

2. **Develop and evaluate a Request for Proposal (RFP) from your pre-qualified field of service vendors**

   - Include the school board's green clean philosophy in the RFP.
   - Request information on vendors' experience in green cleaning.
   - Indicate each building's area (m^2) and define as either occupied or useable. Labour in a facility is based on the pace or the rate at which certain tasks may be completed. Without proper data, vendor responses may fluctuate.
   - Use concrete definitions and avoid vague terms such as "cleanable" or "as often as required" that can be interpreted in a variety of ways by vendors.
   - Set clear specifications and indicate the frequency of the tasks.
   - Use well-established standards or requirements to identify appropriate products for use by the contractor including:
     - packaging requirements;
     - solids for floor finishes;
     - performance requirements:
       - for example, floor finishes must last for a minimum of 12 months before stripping is required;
     - size requirements:
       - paper and plastic liners;
     - fragrance requirements or restrictions; and
     - requirements for dispensers for liquid supplies.

As part of the RFP evaluation process, a school board should consider the following:

The mission or vision statement provides a general impression of the core values of the prospective service provider, such as environmental sustainability.

The corporate environmental policy *or* ***sustainability statement*** describes how an organization, given its size and services, will demonstrate environmentally ethical services to its clients while ensuring its own sustainable business practices.

The company's strategic and succession plans should outline its plans for the future, which is vital in an industry where turnover and lack of strategic direction can cripple even the largest organizations.

An organizational chart outlining the company's internal structure and a proposed organizational chart to demonstrate who will be responsible for each deliverable, and his/her position within the larger organization. It should also indicate if a company intends to subcontract part of the contract. If a subcontractor is used, the company should ensure that green expectations be communicated and adhered to all subcontractors.

Evidence of Corporate Compliance with all local, provincial and federal regulatory requirements should be part of every contract. These documents are readily available to the service providers and should be presented in their responses. Examples of these include workplace safety insurance certification and applicable corporate taxes.

A copy of the company's ***hazardous response and communication plan***, a brief description of how the plan would be altered to meet the school board's agreement, if the proponent was successful, and samples of its training logs over the last three years.

Verification of responsible purchasing confirms that cleaning products are certified by EcoLogo or Green Seal and equipment is environmentally responsible.

The company's quality control program will determine whether the service requirements are being met and where there are opportunities for improvement. A comprehensive QCP should include:

A service communication plan:

- Outlines how the contractor will remedy issues that arise and prevent them from recurring.
- Provides metrics indicating the current versus desired service levels. Samples of metrics may include surveys of students, teachers and staff, as well as the cleaning crew; visual site inspection; documentation of compliance, chemical inventory and usage rates, recycling percentages as a measure of total waste of the facility and other innovative methods of documenting the program.

Recruitment processes:

- Background checks

A training plan:

- Training required
- Processes for logging safety training

A retention plan:

- Indicate the vendor's corporate turnover rates
- Recognition programs
- Rates of pay and benefits in comparison to the industry
- Any other effective systems
- Measurement tools to determine the ongoing success of the operation

When evaluating the vendor's QCP, consider that there will be a significant variation among organizations, but the key is its feasibility.

References provide an opportunity to evaluate whether the vendor has similar experience to the type of cleaning project. As part of the reference, a school board should inquire about the respective floor space area, the staffing, the length of service and the performance metrics used.

Once the requirements of the RFP have been determined, the school board should provide clear and specific information for vendors to assess so that they can provide accurate quotes and responses to the school board. The following tables are good information templates that a school board should consider including in a green clean RFP.

Table 3: Examples of cleaning periodic cleaning frequencies

Frequency of cleaning required			
Required	**Annual**	**Monthly**	**Weekly**
1x per week	52	4	1
2x per week	104	9	2
3x per week	156	13	3
4x per week	208	17	4
5x per week	260	22	5
Quarterly	4		
Semi-annually	2		
Annually	1		

Table 4: Examples of cleaning frequencies by hours

Hours (based on an 8 hour day)				
Required	**Per year**	**Per month**	**Per week**	**Per day**
1x per week	413	34	8	8
2x per week	826	69	16	8
3x per week	1238	103	24	8
4x per week	1651	138	32	8
5x per week	2064	172	40	8

Frequency of cleaning required indicates how often each task occurs during the cleaning process and the associated cost of labour in the operations.

A school board should also provide detailed floor space area information for each facility so that vendors can calculate the staffing required to clean the facility.

The frequency of cleaning required information and the m^2 information should provide the necessary data for school boards to provide a detailed *cost/staffing model* in the RFP response. The *cost/staffing model* is a line-by-line breakdown of all of the costs involved with the operations of the facility. The model should include:

- number of hours worked by crew member type
- respective rates of pay for these members
- benefits (medical, vacation, sick time)
- tax and insurance burdens
- supply costs
- mark-up (gross and net profit) for the entire operation

Any other infrequent tasks such as carpet cleaning, window washing may also be provided in a separate cost model. This information establishes a performance-based relationship that removes all ambiguity.

2.7. Partner with Your Vendor

Practical tip

Vendors are a key external stakeholder that must buy into the green clean program.

Enlist their support early on in the process.

A key operational consideration in creating a green clean program is to select the right vendor to partner with the school board. As the green clean pilot program demonstrated, a school board can capitalize on its existing relationship and buying power with a vendor to identify green clean products and equipment.

When a school board enters a partnership with a vendor, it creates a dynamic that allows the vendor to participate and provide input into the green clean program. A partnership approach gives vendors a vested interest in the success of the program and creates a two-way dialogue that will support the adoption and ongoing evolution of a green clean program. For example in the pilot program, vendors worked

directly with the custodian(s) and the principal at each school to identify products that would work best for the specific facility. As new products were introduced, vendors were available and able to respond immediately to questions or issues as they occurred.

In addition, your vendor can be a strategic resource for a school board in generating custodial buy-in and support. When a vendor participates in the launch of a green clean program, it gives custodians an opportunity to raise their concerns about new products/equipment and get answers directly from the vendor, which can remove potential barriers to adopting the green clean program before the program is implemented. Many custodians, who participated in the pilot program, indicated in their post-pilot interviews that they believed that the success of the green clean program depended on the success of the cleaning products and equipment, interchangeably using the terms green clean program and green products.

While each relationship between the pilot school boards and their existing vendors was different, the importance of the partnership between them was reflected in a school's adoption of a green clean program. In pilot schools where the school board had a strong partnership, vendors immediately responded to custodian concerns about product and equipment and worked with custodians to identify solutions that supported the adoption of the green clean program. The benefits to the green clean program were:

- it minimized custodian resistance to the implementation of the green clean program by quickly removing a barrier to buy-in; and
- it built a positive, problem-solving partnership that demonstrated the evolutionary process of a green clean program where trial and error are a normal part of identifying effective green clean products and equipment that are right for the facility.

For example at one pilot school board's custodians found that the dispensing system, although effective, was dispersing excessive amounts of cleaning product. The vendor was consulted and together they identified that the issue was an incorrect tip on the dispensing system. The vendor promptly replaced all the systems with the correct tip, which resolved the problem and minimized the amount of cleaning chemical that was being used.

When working with vendors, a school board should set expectations for the vendor. Expectations could include:

Product training

- Clearly define the level of training to be delivered
- Identify ongoing support, such as training for new hires

Problem management

- Clearly define the vendor's process to resolve performance issues including product effectiveness and equipment performance
- Specify a minimum number of field visits to a site the vendor must make to check on new products
- Scheduled conference calls between the vendor and custodians to discuss product issues

- Clear expectations of the vendor's role and an open dialogue between the vendor and school board staff, including custodians, are the foundation to creating a successful partnership

When a school board is selecting a new vendor for green clean products and equipment, it should consider the following factors:

Vendor's relationship with manufacturers:

- Ability to provide training to custodians and staff when transitioning a site to a new product
- Ability to provide communication material for staff, students and parents such as posters, flyers, letter templates or other communication tools that can be used to support the implementation of the green clean program and supplement a school board's communications strategy

Vendor's product knowledge and expertise:

- Is the vendor familiar with the requirements of a green clean program?
- Has the vendor implemented a green clean program with another school board in Ontario? The vendor should supply:
  - a list of other school boards the vendor supplies;
  - references from other school boards;
  - ability to answer questions; and
  - ability to troubleshoot problems.

Vendor products

- Does the vendor sell certified products and/or equipment, such as EcoLogo or Green Seal?
- Does the vendor have a large number of green clean products to choose from?
- Does the vendor have the ability to arrange for small shipments to minimize inventory costs?
- Does the vendor have a sufficient stock of green products and can it make emergency deliveries when required?
  - Tour the vendor's warehouse to confirm its commitment to green clean products.

Vendor's value-added services:

- Has the vendor defined the value-added services?
- Has the vendor demonstrated what the value-added services are and how they will benefit a school board?

As part of the evaluation process, a school board should consider the "all-in cost" of a vendor which includes unit price *and* the value of training, available communication/education materials, a vendor's ability to deliver small orders quickly and other support.

2.8. Conducting Inspections and Reporting Findings

A school board should conduct regular inspections of schools to support the implementation of a green clean program and to identify opportunities for improvement.

Inspections should evaluate a site's progress in adopting the green clean program. Inspections should be approached as a learning experience, with an emphasis on developing best practices to be shared and identifying ways to further develop the green clean program.

Inspections should be conducted on:

- different days at different times;
- different parts of a school each time – there is no need to inspect an entire school in one day;
- speak with a variety of building occupants, such as administrative staff, teachers or students, as part of the assessment; and,
- consider using a scale system to give the school a grade, based on your findings. Try to have the same comparison for all schools so each school can see where it stands in the district. From the inspection, a set of actions could be developed to improve the school before the next inspection. The documentation could then be used to recognize opportunities for improvement.

From a custodial perspective, an inspection is an opportunity to document protocols, tasks and the related frequencies of the actual work in comparison to the standards set out in the Green Clean Standard Operating Procedures (SOP) Manual. This provides the school board with an opportunity to consider possible revisions to the Green SOP Manual based on experience and it creates a forum to open a dialogue with custodians who may still have concerns about the green clean program. It also identifies ways to remove any remaining barriers and enhance compliance to the new standards.

From an occupant perspective, an inspection provides various stakeholders an opportunity to provide feedback on the green clean program. Occupants can voice their complaints, such as "cleaning is poor," and a school board can identify stakeholder barriers to the adoption of the green clean program. In cases where complaints are legitimate, a school board can adjust its protocols to address the issue.

However, in most cases complaints are the result of a conflict between cleaning protocols and occupants' expectations. For example, some people believe that a clean building has a specific scent, usually associated with a particular cleaning product. When a school moves to a green clean program and no longer has the scent that some individuals associate as "clean", there may be complaints about the quality of the cleaning. A regular inspection will help the school board identify barriers to adoption and implement a communications strategy to educate occupants to align occupant expectations with the green clean program.

During an inspection, a school board should consider the following issues:

Cleaning chemicals

Recommended documentation:
- Note the product and manufacturer's name
- Match the product with its material safety data sheet (MSDS) or one of the online databases to determine hazards
- Note the location where the product was found

Red flag issues:
- Ready-to-use products
- Absence of dilution equipment
- Aerosol products
- Chlorine bleach
- Ammonia
- Products labelled as dangerous, flammable or poisonous
- Products brought from home – can include teachers, administrative staff or custodial staff
- If the product was not stored in a primary product storage area, such as in pantries or in occupant offices
- Unlabeled or inappropriately labelled containers
- Damaged or leaking containers

Paper products (hand towels and toilet tissue)

Recommended documentation:
- Note the recycled content (if any)
- Note the size of the rolls
  - Can they can be replaced with larger rolls
- Note the appropriate information on dispensers

Red flag issues:
- Multi-fold towel dispensers
- Damaged/broken towel dispensers:
  - Automated sensors that are not working properly
  - Where the tension of the dispenser combined with a low-quality (low strength) paper, product results in the paper's tearing easily and not correctly dispensing

Garbage cans and plastic liners

Recommended documentation:
- Note the recycled content of both cans and liners
- Note the type and thickness of the plastic liners
- Are garbage cans standardized
- Are liners right-sized

Red flag issues:

- Garbage cans that require multiple liners
- Inappropriate sized plastic liners that are obviously too large or too small for The garbage can
- Use of multiple sized garbage cans

Custodial powered equipment

Recommended documentation:

- Collect the manufacturer's name, model number and size of the equipment
- Match equipment with manufacturer's technical sheets
- Make a general assessment of each piece of equipment's state of repair:
  - Note damaged cords and other items that are serious hazards
- Repair logs:
  - Note documentation for service and associated expenses

Red flag issues:

- Visible damage such a bare wires or cords that have been repeatedly taped
- Vacuum cleaners:
  - That do not contain disposable filter bags
  - Bags are full to the top (vacuum efficiency declines significantly when bags are more than a quarter full and are virtually useless when more than half full)
- Floor machines that leave tracks due to damaged or misaligned squeegees
- Floor scrubbers and carpet extraction equipment with water left in the solution or recovery tank
- Propane tanks stored on site

Entry mats

Recommended documentation:

- Inventory of entry mats
- Determine if mats are at all entries are actually used by occupants and visitors
- Note the size and condition of each mat and whether it is appropriate for the location

Red flag issues:

- Mats that are too short or too small
- Mats that have curling corners and edges
- Mats that are old, worn or loaded to the point where they cannot capture soil or moisture
- Mats that move or slide when walked on

Other products
Recommended documentation:

- Note mops and mop buckets, recycling containers, carts and anything else observed during the inspection
- Note the state of repair, size and appropriateness of each item for the task
- Identify products that can be replaced by a green alternative when they reach the end of their lifecycle

General housekeeping assessment
Recommended strategy:

- A simple walk-through of the building
- Vary the focus of each inspection
- Assess the current state of cleanliness and orderliness
- Evaluate entryways including exterior entryways
- Review lobbies, restrooms, offices, cafeterias and food preparation areas, laboratories, guest rooms as appropriate
- Note conditions and where improvements can be made
- Look beyond “typical” cleaning issues and note observations

Red flag issues:

- Visible soil and pay attention to odours
- Signs of insects and rodent droppings
- General disarray in offices, classrooms, workspaces or other areas where desks, cabinets, floors, etc. are so cluttered that dusting or floor care cannot be performed;
- Recycling and garbage cans are being appropriately used
- Restrooms that are smelly, messy or dirty
- Alteration of ventilation systems, such as cardboard taped to HVAC diffusers in the ceiling, personal air filters or space heaters on desks.
- Cleaning products that are not part of the green clean program, e.g. brought from home

Inspection of cleaning procedures
Recommended strategy:

- Spend time with the cleaning crews – both day and evening shifts – and observe how they clean;
- Observe how efficiently and effectively custodians clean:
    - Are different kinds of equipment being used appropriately
    - Are filter bags and capture tanks emptied at the appropriate intervals
    - Are chemicals correctly mixed and used
    - Is additional training required
    - Are waste products correctly disposed
    - Is hot water used when cold water would work
    - Are recyclables and waste handled appropriately
    - Are staff wearing proper protective gear
    - Are staff using proper techniques to avoid back and other injuries, such as correct lifting methods

Red flag issues:

- Lack of specific daily job cards and work assignments

Assessment of storage areas
Recommended strategy:

- Identify any immediate storage problems
- Note how the area is organized:
  - Organizing a storage area can help manage inventories, reduce waste and, reduce wasted time
- Write a simple report:
    - Identify opportunities for improvement
    - Provide enough background information to substantiate the recommended changes
    - Keep the report concise:
      - Five to six pages in length
      - Include a few of the key findings under each area
      - If there are some findings of great concern, consider speaking directly with building management for the school
      - If health issues or violations of laws are involved, encourage custodians and other users to discuss these with a medical professional or other appropriate person

Red flag issues:

- Incompatible products, such as bleach and ammonia, being stored together
- Leaking or damaged products
- Flammable products
- General disarray and clutter

Practical tip

Green clean technology is constantly evolving.

Have a long-term plan with staged upgrades as new technologies evolve.

2.9. New Technologies

New technologies are evolving at a rapid pace. For each new technology, a school board should consider the potential value it might bring to the green clean program, and before committing to purchase it, conduct a cost-benefit analysis and test it in a pilot school. A strong partnership with a vendor will ensure that a school board has the opportunity to test new technologies and assess all available options.

The following list is meant to provide an initial starting point for a school board considering new technologies.

Table 5: Examples of new cleaning technology

Technology	Possible uses and perceived benefits
Abrasive floor pads	• Used to strip old floor finishes • Removes the need to use harmful chemicals • Can be less expensive and faster than chemicals
Electrolyzing water technology	• Converts tap water into a cleaning agent • Eliminates chemicals from the process

Technology	Possible uses and perceived benefits
Micro- fibre integrated floor cleaning systems	• Includes a product dispenser integrated into the system through the mop or backpack • Reduces water and chemical use • Reduces cross-contamination
Rapidly renewable paper	• Resources can be replenished in three to five years • Paper from mixed tropical woods, acacia and eucalyptus trees
Spray and vac touch-free cleaning systems	• Hook up to external water suppliers or tank • Ergonomic design minimizes worker exposure to contaminated surfaces • Reduces dependence on chemicals and water • Reduces cross-contamination
Vapour disinfecting technology	• Uses tap water to clean and disinfect surfaces • Replaces chemical disinfectants
Waterless urinals	• Saves water and sewage costs • Prevents odour with vapour barriers
Energy and chemical monitoring equipment	• Used to evaluate energy and chemical usage in ware washing • Data used to improve procedures to improve energy efficiency and reduce chemical usage
Bacterial resistant surfaces	• Can help inhibit the growth of bacteria, fungus and mildew • To be effective, surfaces still need to be cleaned
Silver-ion technology disinfectants	• Non-hazardous, chemical-free cleaning agents with a 24-hour residual protection
Soy composite for waterless urinals	• Used with waterless urinals • Composed of 30% soybean resin, which is more environmentally sound than traditional products • Appearance is consistent with traditional urinals
Electronic flushometers	• Water efficient • Sensing technology ensures flushing
Metering faucets	• Water efficient

3. Implementation Plan

Who should read this?

- Facility managers
- Custodians
- School principals and teachers
- Anyone who will have a role in implementing the green clean program

The following is a step-by-step plan on how to implement a green clean program.

3.1. 10-Step Green Clean Implementation Plan

Implementation of a green clean program is a process of seeking better cleaning products and processes that have less impact on occupants and the environment.

i. Formally adopt a green clean program at a school board level
ii. Articulate a green clean program as a key component of a school board's overarching environment education policy
iii. Establish a Green Clean Team to implement the green clean program as directed by the school board.
iv. Develop the tools required to support implementation
v. Dialogue with existing vendors
vi. Work with the school board's existing product selection committee to incorporate a green clean perspective on the procurement of equipment and supplies
vii. Develop a stakeholder outreach strategy for frontline stakeholders
viii. Create a communications strategy to promote green clean
ix. Establish a school level implementation plan
x. Measure and monitor progress

3.2. Formally Adopt a Green Clean Program at the School Board Level

The Board of Trustees' support for a green clean program should be formal and documented. The Board of Trustees should put forward a motion to drive a school board-wide adoption of a green clean program. This should be done after the Board of Trustees and staff have conducted due consultation with key administrative stakeholders, including facilities and custodial services, communications and procurement staff.

The Board of Trustees should have a clear understanding of what a green clean program is, its objectives, how it fits within the school board's overarching environmental education policy and the business case that supports the decision to adopt it.

Formal Board of Trustee support for a green clean program is an important step in creating stakeholder buy-in and internal support from other departments, such as, communications and procurement, to facilitate the adoption of this change management initiative.

3.3. Articulate a Green Clean Program as a Key Component of the School Board's Overarching Environmental Education Policy

If the school board has not yet developed an overarching environmental education policy, as set out in the Ministry's *Acting Today, Shaping Tomorrow: A Policy Framework for Environmental Education in Ontario*, a green clean program can be incorporated into the policy statement.

If a school board already has an overarching environmental education policy, a school board will need to obtain the Board of Trustees' approval of the policy statement.

A green clean program policy statement should be a concise document. It should include:

- a clear commitment to implementing a green clean program across all schools;
- positive endorsement of green clean practices;
- an outline of roles and responsibilities at a high level; and
- a mechanism by which to evaluate the initiative's progress and outcomes.

Since each school board has its own process of developing a policy, the Guide will not discuss this topic any further.

3.4. Establish a Green Clean Team

A school board needs to establish the internal administrative infrastructure required to support the green clean program. The Guide outlines a two-tiered team, including a Green Clean Team and a Steering Committee. However, this is only one possible option, and a school board may choose another model, such as a single team, or consider leveraging existing organizational structures.

A Steering Committee is typically made up of senior administration officials and establishes green clean policies that all schools will incorporate. The Steering Committee should provide oversight for the Green Clean Team, identify and remove barriers of implementation and be ultimately accountable for the outcomes of the initiative.

A Green Clean Team is made up of wide selection of internal and external stakeholders and is responsible for delivering the green clean program. While internal stakeholders are responsible for implementing day-to-day operational activities, external stakeholders will provide input and feedback throughout the process.

Table 6: List of Potential Team Members

Team	Potential team members
Steering Committee	• Board of Trustees • Director of Education • Superintendent of business • Superintendent of operations • Manager of operations • Head custodian • Senior union officials • Others (determined by the school board)
Green Clean Team	• Facility managers • Custodians • School principals • Teachers • School administrative staff • Communications staff • Contract service providers (where applicable) • Vendors • Students • Parents • Union representatives • Other (determined by the school board)

Practical tip

Choose an individual champion who has a genuine passion for taking responsibility for the environment.

Leadership skills and technical knowledge are both important, but the most important criterion is personal commitment and passion.

Identify a green clean champion

A green clean champion plays a critical role in the launch and adoption of a green clean program. As a change management initiative, a green clean program is dependent on stakeholders buying into the concept.

The function of a green clean champion is to generate goodwill toward the initiative and motivate stakeholders to adopt new behaviours – this role may be performed by a custodian, who may use green products or alternative cleaning methods to do the same job; or students, who can keep their lockers clean from food to minimize the use of chemicals for pest control.

Some leading characteristics that a green clean champion should have are:

- an established rapport with key stakeholder groups;
- a strong belief in the benefits of a green clean program;
- an ability to generate enthusiasm and motivate individuals to support a common goal;
- the respect of stakeholders and an ability to build partnerships with key influencers; and
- strong communications skills so that the individual can both deliver the school board's key messages on the initiative to stakeholders and channel stakeholder feedback to key decision makers that will support the ongoing evolution of the program.

However, a champion does not have to be an expert in green cleaning.

The primary responsibilities of a green clean champion are:

- Coordinate the Steering Committee and Green Clean Team to ensure:
  - required information is available
  - informed decisions are made in a timely fashion
  - all stakeholders are kept up to date
- Liaise with stakeholder groups in order to:
  - keep them apprised of progress
  - respond to questions quickly and accurately
  - stay abreast of any issues or concerns
- Act as point of contact for the initiative

3.5. Develop the Tools Required to Support Implementation

The smooth implementation of any project is dependent on having the right tools to support the initiatives' objectives. A school board should develop the following tools prior to rolling out a green clean program:

Green Clean SOP Manual

- Sets out the school board's expectations for green clean operational procedures in schools:
  - Modify existing school board procedures with a green perspective
  - Include standard procedures for:
    - product chemical evaluation
    - equipment evaluation
    - procurement protocols
  - Procedures for dealing with vulnerable populations

Develop a pilot program

- Determine if a pilot program is necessary
  - Benefits of a pilot program:
    - demonstrate the benefits of a green clean program
    - opportunity to work out complex implementation issues
    - opportunity to test a new approach and create custodial buy-in before rolling out to all schools

Establish the number of schools

- Determine timeframes for implementation, a pilot program should have a beginning *and* an end, typically one to three months
  - define an absolute date (usually the best approach); or,
  - when a certain measure is completed (e.g. a target percentage of green certified products has been achieved).

Identify specific schools to participate

- Schools with strong grassroots support from students/parents/teachers
- Schools that already participate in environmental or conservation initiatives, such as Ontario EcoSchools or Earth Care.

Assess how pilot program findings will be used to improve the green clean program before rollout to additional schools

- Whether milestones were met
- Custodial feedback
  - Products/equipment/process
  - outreach program
- Occupant feedback;
  - Awareness program

A green clean site plan is developed for each identified pilot program school

- Identify the unique needs and goals of the school within the context of a school board's green clean program
- Refine procedures to meet the needs and unique challenges
- Identify how green clean practices are applied to the specifications of the school
- Identify specific products, equipment and supplies:
  - How are they used
  - Maintenance
  - Disposal

Custodial equipment inventory form:

- Records custodian's feedback regarding usage of equipment
- A sample template is provided in Appendix J

Training program

- Leverage vendors to conduct training sessions
- Sessions should be no more than four hours
  - Keep sessions interactive
  - Be aware of potential training issues
    - Appropriate for situation;
      - Uses visual cues **and** verbal communication
        - English/French as a second language
        - Literacy/numeracy issues
      - Meets staff's learning needs/styles
    - Colour coding
    - Icons
    - Is a "Train-the-Trainer" program available?

Vendor/manufacturer should demonstrate products or equipment

- Custom training available
- Allow custodians an opportunity to ask the vendor questions and raise concerns
- Is training material available?
  - Product specific or covers a range of models
  - Is it comprehensive and up to date?
  - Video
  - Available in other languages

Vendor should go to the school to conduct an onsite training visit

- Training records
  - Housekeeping audit forms
  - Sample template provided in Appendix J
- Review recycling program
- Ensure that the building collection meets local guidelines
- Conduct a garbage/recycling audit

- Are building occupants correctly disposing recyclable material?
  - Does the board have an awareness campaign to minimize pests?
    - Are pop cans or foam containers rinsed prior to recycling?
  - Monitor annual recycling audits to track results as desired
  - Establish clear recycling procedures
  - Establish clear recycling goals for each school

3.6. Dialogue with Existing Vendors

As outlined earlier in the Guide, creating a partnership with your vendors can benefit the adoption process of a school board's green clean program. Meet with your existing vendor(s) to discuss the school board's initiative and how the vendor can meet the new requirements for green clean products and equipment. Cultivate your existing vendor's support for the initiative and identify ways it can encourage stakeholders to buy into the green clean program.

If a school board's current contract is about to expire, refer to Section 2.7, Partner with your Vendor.

If a school board intends to re-tender its cleaning supply contracts, refer Section 2.6 "Auxiliary Services."

3.7. Work with the Board's Existing Product Selection Committee

Most school boards have an existing product selection committee. The Green Clean Team should work with the school board's existing product selection committee to incorporate a green clean perspective on the procurement of equipment and supplies.

A school board's product selection committee should provide the first evaluation of green clean products and equipment and their suitability to the school board and identify procurement priorities for the initiative.

The product selection committee should consist of members from a cross-section of a school board and at least one individual from the following functional areas:

- facilities management
- custodial services
- procurement
- business services

3.8. Develop an Outreach Strategy for Frontline Stakeholders

It does not matter whether a green clean program is initiated by a grassroots movement of custodians/students/parents or a business decision by school board administrators, there may always be frontline stakeholders who feel that changes are being imposed on them as the program is implemented.

The Green Clean Team should work with a school board's communications department to create an outreach strategy to build support and buy-in for the program.

The primary stakeholders that an outreach program should target are custodians and teachers. Custodians are the primary focus for an outreach strategy because a green clean program immediately changes to their day-to-day work and has a direct impact on them.

Teachers should be a secondary focus for an outreach strategy. Some individuals may not immediately see a teacher's role in the initiative, misinterpreting a green clean program as an operational or custodial initiative. However, teachers are an important part of a green clean program, as they play a vital link supporting the work of custodians, creating student awareness, associating green clean principles with the Ontario curriculum, acting as role models and promoting behavioural changes. For example, reinforcing the importance of keeping lockers free of stickers, graffiti and food, keeping desks free from markings and wearing only sports shoes inside the gymnasium are practices that reduce the need to use strong chemical abrasives, and significantly contribute to the adoption of a green clean program.

An outreach program should:

- provide stakeholders with an opportunity to raise concerns and provide feedback;
- articulate the benefits of a green clean program;
- address common concerns and explain why they are not valid;
- generate enthusiasm;
- celebrate key milestones; and
- strategically manage the change initiative.

While implementing the outreach program, the Green Clean Team could keep the following considerations in mind:

- While a school board can decide to adopt a green clean program, adoption is achieved through individuals' collectively buying into the philosophy of the initiative and changing their daily behaviour in both small and significant ways as outlined by the program; and
- Since each individual approaches change differently, based on his/her personality, his/her knowledge and the changes that are being asked of him/her, it is helpful to have a basic understanding of the four fundamental ways that individuals react to change.

Early adopter

- Immediately sees the benefits of a green clean program
- Very keen to adopt and supports quick implementation and ongoing evolution of the program
- Willing to promote the program to colleagues and build support for the initiative

Methodical adapter

- Wants to understand the rationale, facts, and science of the initiative
- Wants to consider the pros and cons associated with the program
- Wants time to evaluate the initiative before deciding whether or not they will support it

Consensus approach

- Typically is neutral about the initiative at the time it is launched
- Attitude toward adoption is influenced by both early and resistant adapters
- Wants to know what others think about the initiative before deciding whether or not his/her supports it

Resistant adapter

- Does not want to change:
  - Likes things the way they are
- May feel threatened by proposed changes:
  - Does not understand the changes or their implications
  - Does not think that the change makes sense
  - May be uncomfortable with how the change will impact them
  - Possible change in personal status-no longer considered an expert
  - Possible fear of learning new technology
- Does not see how the program applies to him/her:
  - Applies to stakeholders who are not directly involved in the cleaning process
  - Resistance may be passive or active

As the school board's green clean program rolls out, it is useful to identify how key individuals are approaching the initiative so that outreach strategies can be tweaked to remove barriers to adoption.

For example, if the majority of stakeholders have a methodical approach to change, the outreach strategy would focus on facts, use the school board's business case and selected case studies to explain the rationale for adopting a green clean program. However, if the majority of stakeholders have a consensus approach to change, the outreach strategy would focus on the green clean industry, the number or educational jurisdictions across North America and Europe that have adopted a green clean program and promote internal key influencers support of the initiative.

In those instances where an individual is resistant to adopting a school board's green clean initiative, a proven strategy is for the green clean champion to work with his/her to identify personal barriers, eliminate the objections and find a way he/she can buy into the initiative.

3.9. Create a Communications Strategy to Promote Green Clean

While a green clean program may have a lot of benefits for occupants, realistically very few of them will make a noticeable impression on building occupants. As a custodian at a pilot school commented, "Green clean is invisible."

As a result, the Green Clean Team should work with a school board's communications department to promote the initiative to target stakeholder groups. Communication is a critical component of a green clean program and needs to be integrated from the very beginning of the initiative and throughout the program's evolution.

The focus of a communication strategy should:

- Ensure the program has a visible presence in schools where it is implemented
- Educate stakeholders so they can:
  - articulate the basic concepts of a green clean program;
  - understand their role in the successful adoption of the green clean program;
  - identify at least two changes that they are being asked to make to their behaviour that would support the adoption of the green clean program; and
  - provide feedback on key concerns that were barriers to adoption.
- Demonstrate senior administration's ongoing commitment to the initiative
- Ongoing promotion of the initiative:
  - celebrate key milestones
  - expansion of the program to new schools
  - highlight success stories
    - generate enthusiasm and support for the initiative;
    - proactive two-way communications between stakeholders and school/board; and
    - custodial work that may impact occupants due to odour:
      - New products
      - Major floor work, such as strip outs, scrub and recoat, carpet spotting or cleaning and pesticide application for cockroaches
    - custodial work that significantly changes the appearance/accessibility of a facility
    - new floor coatings with higher or lower gloss
    - HVAC maintenance;
    - elevator repairs
    - health and safety issues
      - new pandemic planning

- Use a multi-pronged approach and maximize existing communications channels, such as:
    - school board or school website
    - school newsletter or notice to parents;
    - homeroom announcements
    - special events:
        - school assemblies
        - garbage/recycling audits
        - "Clean out your desk or locker" days
        - visual displays
            - School board published announcements/posters
            - Student art related to green clean
        - curriculum initiatives:
            - field trip to recycling plant or landfill
            - science projects
- An awareness program for external vendors:
    - Align the delivery of goods and services of vendors, such as pest management, equipment maintenance, landscaping companies with a school board's green clean philosophy.

Green clean program launch

How an initiative is introduced to stakeholders is critical to how it is perceived and whether or not it is fully adopted. Holding a green clean program launch, whether it is the start of the pilot program or the implementation of green clean in a specific school, is an effective tool to promote the program and create stakeholder awareness.

A launch should achieve the following objectives:

- Create a opportunity for a face-to-face meeting between senior administrators who are initiating the green clean program and the stakeholders who are going to be affected by the program
- Demonstrate the school board's commitment to adopting and evolving a green clean program by the visible participation of senior administrators:
    - at individual schools
    - across the school board
- Share the school board's vision of a green clean program.
    - Concise presentation – less than three hours:
        - define green clean
        - reasons why a school board is adopting
        - benefits to stakeholders
        - benefits to the environment
    - Identify key milestones in the program
        - identify immediate changes:
            - new products and/or equipment
            - new procedures
            - reason for specific changes
            - impact of these changes on each stakeholder group
            - set expectations on the green clean program's evolution
            - set out corresponding timelines

- Identify stakeholders' roles and responsibilities:
  - what is expected of each group
  - encourage active participation of all stakeholder groups in the initiative
  - articulate two things that the school board is asking each group to do that will support the adoption of a green clean program
- Include the vendor as a speaker:
  - hands-on demonstration of new products
- Put the school board's program in context:
  - current program is not "bad", green clean is an opportunity to capitalize on new products/technology
  - other jurisdictions that have implemented successful green clean programs.
- Maximize stakeholder participation:
  - Schedule the launch to include as many participants as possible
  - Provide time for stakeholders to ask questions and raise concerns
  - Create the foundation for a two-way dialogue:
    - promote communications channels that participants can use to give honest and constructive feedback:
      - surveys
      - internal interviews

3.10. Establish a School Level Implementation Plan

Steps 3.2-3.9 should generally be driven by the central administration of a school board. Once the green clean program has gained momentum at the school board level, implementation plans will need to be developed for each school to ensure a smooth adoption.

Many schools are unique and each school needs to establish a plan:

- Whether it is a good candidate to participate in the pilot program:
  - Identify any potential barriers or special requirements
  - Participant in Earth Care or Ontario Eco School program
  - Interested custodians or principal on site
- Identify a key individual at the school to be an on-site green clean champion:
  - promote the initiative to custodians, teachers, students at a local level
  - identify how the principal can support the implementation of a green clean program:
    - classroom announcements, newsletters, etc.
    - working with teachers to identify ties to the curriculum
- School level green clean priorities;
- A timeline for implementation at the school:
  - defined milestones
  - associated resource requirements
  - contingency options
  - a communications strategy to promote the initiative within the school
- The order that steps will be implemented:

    - document each proposed change
    - reason for the change
    - expected result of the change
    - proposed objective methodology to measure the impact of the change
    - evaluation of the change – was it successful?
- Determine new procedures:
- Recommendations to prevent dirt and other contaminants entering the school to reduce the quantity of cleaning required in the first place
    - Simple procedures, such as adding entryway mats
    - Complex solutions, such as adding breezeways or covered entrance points
    - Typically includes repairs to building structures
- Improve productivity and ergonomics
    - review equipment:
        - are staff using it?
        - is it the right tool for the job?
        - is it the right "fit" for the person doing the job?
        - what is its state of repair?
        - determine where it is in its lifecycle

3.11. Measure and Monitor Progress

A green clean program is an ongoing process with numerous shades of green.

The development and implementation of a green clean program is the start of a journey. It is not realistic for a school or school board to become 100% green within a year. Over time, the percentage of green clean products will increase, existing equipment will be replaced with newer, greener technology and the program will mature and become "greener."

And, as the program evolves, the green clean industry will also evolve and the standard will rise as new products and technologies become available and/or affordable and as the science of cleaning discovers new and better methodologies to do the same tasks.

In short, evolution is a core component of a green clean program, and a school board should proactively plan how it envisions its green clean program evolving over the long term.

Over the first year of implementation, a review of the initiative should be conducted every three to six months. After the first year, a review should be conducted on an annual basis. The review could include the following:

- Assessment of the original baseline measures versus current state
- Key milestones with actual progress:
    - percentage of non-green clean products
    - identify opportunities for improvement
    - proportion of schools adopting the green clean program
- Program priorities:

    - ensure they are still valid.
- Stakeholder feedback:
    - periodic occupant surveys, student assemblies, focus groups:
        - a subjective measure that reflects stakeholders' perception of progress
- Identify opportunities for improvement:
    - determine feasibility and associated costs
    - review of new products/technology
    - review of new cleaning approaches
    - review of other jurisdiction's green clean programs:
        - identify best practices
- How the implementation of the program should be revised to positively build on the findings of the review

Table 7: Examples of objective measures

Objective measures are tangible and quantitative. These measures are useful in evaluating the success of the green clean program and planning how it will evolve over time.

Potential objective measurement	Reason to consider
Chemical Safety Inventories	• Measure the number, type and toxicity of the chemicals used and demonstrate trends to more environmentally responsible chemicals • The measure is easy to collect and quantifiable
Effectiveness	• Measures the quantity of effort that custodians exert in each category • Goal: To identify opportunities to accomplish a broader range of custodial assignments through more efficient use of resources

Purchasing efficiencies	• Measures any efficiencies in the procurement of the chemicals, equipment and supplies
	  • Concentrated products vs RTU
	  • Packaging efficiencies (i.e. less disposal of packaging materials, less transportation)

Overall Cost Savings	• Measure cost savings and associated benefits
Chemical Risk Avoidance	• Ability to deliver the same level of maintenance while reducing risks of exposure to human health and the environment
Number of certified Green Clean products used	• Measures year-over-year evolution of the green clean program from implementation to 100% adoption of certified green clean products • A statistic measure that is easy for all stakeholders – the Board of Trustees to students – to understand

Potential objective measurement	Reason to consider
Particulate Sampling	• Unless there is a specific requirement for this type of measurement, it is extremely expensive and usually not worth the additional cost. • Interested school boards should note that it requires proper equipment and a knowledgeable consultant. • Systems that purport to offer the same results with low-cost equipment should be judged with appropriate scepticism.
Incidences of Health Issues	• Measures the number of incidents of asthma, skin and eye irritations, breathing difficulties and dizziness which can be a useful in assessing overall occupant health at a site.

Practical tip

Although subjective measures are by definition not quantifiable, they provide insight on the underlying emotional concerns of your stakeholders.

Table 8: Examples of subjective measures

Subjective measures reflect occupant perceptions gathered in pre-implementation and post-implementation surveys or interviews. The usefulness of these measures is to provide perspective on attitudes and guide future communications strategies.

Potential subjective measurement	Reason to consider
Commitment to environmental protection	• Stakeholders understanding of the green clean program
Adoption of green clean practices by the next generation	• What is the impact of the program on participants? • Changes in behaviours • Changes in attitude
Air quality	• Can identify non-cleaning issues such as problems with ventilation etc.
Cleanliness and appearance	• Can identify barriers to adoption, such as preconceived notions of what “smells” clean • Can identify opportunities to prioritize custodial functions to address perceptions

4. Culture and Awareness: People Engagement

Who should read this?

- School administration;
- Facility managers;
- School principals; and,
- Other key planners.

Many people incorrectly think that the core of a green clean program is simply replacing current cleaning products with green clean products.

Instead, the foundation of a green clean program is a change management initiative as it requires individuals to modify their behaviour in both small and significant ways.

To successfully implement a green clean program, a school board must engage its internal and external stakeholders to create an awareness of the program and develop a culture that will support its ongoing evolution.

4.1. Building the Teams

Building a team is more than putting together a group of people to work on an initiative; it is about creating a team culture.

When establishing the school board's Green Clean Team, members should be selected based on their knowledge, interest and ability to contribute to the successful implementation of the initiative.

To promote a team culture, consider the following:

- set clear expectations for the team;
- ensure the team is empowered to make a difference;
- share leadership responsibility and rotate other roles as needed;
- create an environment of collaboration where all members participate;
- members should:
  - be committed to green clean;
  - be competent in their relevant fields of expertise;
  - support, respect and trust for one another;
- Identify mechanisms to manage conflict or inappropriate behaviours; and
- Demonstrate senior management support for the team and its work.

4.2. Partner with Custodial Staff

While custodians are key stakeholders in a green clean program, they are also a school board's partner in the implementation of the initiative.

As the frontline implementers of a green clean program, custodians are the foundation for its success. While there are many direct benefits to custodians for participating in a green clean program, they are also the stakeholder group that is most affected by the changes associated with the initiative.

A collaborative partnership should be based on the values of respect, recognition, integrity and consensus.

4.3. Stakeholder Group Analysis

Collectively, the culture of a school board is made up of its internal and external stakeholders, each fragmented with their own interests and priorities.

A school board needs to communicate with each stakeholder group, address its unique concerns, identify its roles and responsibilities in the adoption of the green clean program and secure its buy-in.

When all stakeholders have bought into the initiative, a school board will have created a supportive culture that will sustain the implementation and evolution of the green clean program.

Table 9: Internal and external stakeholders

The following chart identifies internal and external stakeholders and their roles:

Internal stakeholders	External stakeholders
Involved in the approval process and serve to endorse the program • Board of Trustees	**Constituents represented by Board of Trustees** • Parents
Users and individuals with direct contact with cleaning products • Custodial staff • Maintenance staff	**Representatives of custodial and maintenance staff** • Labour unions
Individuals involved in buying or managing cleaning products and equipment • Procurement managers • Operations and facility managers • School support staff • Green clean product selection • Committee custodians	**Partners involved in procurement process** • Vendors/suppliers • Contractors
Occupants • Teachers • Non-teaching staff • Students	**Other** • Public health unit representatives • Parents • Union representatives • Community users

4.4. Promote Stewardship

The concept of stewardship is that people care.

People care how their behaviour impacts the school, other occupants and the environment as a whole.

Shared responsibility
The responsibility of a clean, safe and healthy school is not the sole responsibility of custodians; it is a shared responsibility. Every individual who enters a school has an impact on the building and the actions that will be required to make it clean for the next day.

A successful green clean program ensures that everyone understands that, collectively he/she is responsible for managing his/her individual behaviour to support the goals of the initiative.

Occupant responsibility
The first priority is prevention. Occupants have an enormous impact on what types of measures are required to clean a school. Raising awareness of how specific behaviours impact the cleaning process can modify the occupants' behaviour and create a sense of responsibility and stewardship.

There are a lot of small things that students, teachers and administrators can do to minimize the quantity and type of chemicals being used.

The charts below highlight both wanted and unwanted behaviours and the rationale.

Table 10: The Dos and Don'ts for green clean

Wanted behaviour	Rationale
Kick mud, slush, snow off shoes/boots before entering the school	• If less dirt enters the school, it reduces both the quantity of cleaning done and the quantity of cleaning product used.
Recycle, Reduce and Re-Use	• Maximizes the quantity of materials that are recycled and can be used again • Minimizes the quantity of material that is sent to a landfill, which is bad for the environment and expensive for a school board's budget

Unwanted behaviour	Rationale
Doodling on desks and other furniture	Removal of graphite, crayon, pen, paint, gum, and residual adhesive from furniture, lockers, walls and brick surfaces requires harsh, toxic cleaning chemicals.
Graffiti (paint) on exterior walls	
Stickers in lockers	
Gum (any place other than the garbage)	
Food • **Left overnight in lockers** • **Crumbs in desks and outside designated eating areas**	Attracts pests such as ants, cockroaches, mice, which require pest controls that contain toxic chemical components.
Wearing outside running shoes or black-soled shoes in the gym	These leave marks on the gym floor which means the floor has to be refinished more frequently. Floor strippers and cleaning products contain harsh toxic chemicals.

The second priority is early intervention.

Anyone who has ever cleaned up a mess knows that it is much easier to do it immediately than to wait until it has set in or spread. Cleaning a school is no different. When accidents are immediately cleaned up it takes less time and fewer chemicals.

Occupants should immediately report to the custodian any liquid spills, carpet soiling or other accidents.

APPENDIX A

Green Clean Program Resource Guide

Things Custodians Should Know

March 2010

THE ASHKIN GROUP, LLC
The Green Cleaning Experts

ΠωX

11 things you need to know about the green clean program

1) What is the Ontario Green Clean Program?

2) Why has the Ministry of Education Issued the Ontario Green Clean Program Resource Guide?

3) Why is the school board adopting a green clean program?

4) What are the key concepts in successfully implementing a green clean program?

5) What is a certified green clean product?

6) Do green clean products really work?

7) Has a green clean program ever been implemented in a publicly funded school in Ontario?

8) What were the results of the pilot program?

9) What if a green product does not work?

10) Does a Green Clean Program mean more work for me?

11) Where do I fit into the green clean program?

1. What is the Ontario Green Clean Program?

The purpose of the Ontario Green Clean Program is to promote a high-quality, healthy indoor environment in Ontario schools for students, staff and other occupants through the use of effective, environmentally responsible, certified green products and cleaning processes.

2. Why has the Ministry of Education issued the Ontario Green Clean Program Resource Guide?

The Ministry of Education initiated the *Ontario Green Clean Program Resource Guide* for two reasons:

a. In 2005 the Ministry staff met with unions representing education support workers to discuss member concerns about health and safety issue and the potential for a green clean program to make a positive impact on the working conditions of their members, in particular custodians; and

b. In 2007, the Council of Senior Business Officials' Effectiveness and Efficiency Advisory Committee (COSBO's E&E Committee) identified that a large number of school boards were interested in adopting a green clean program but required more information on best practices for implementation.

As a result, the Ministry of Education convened a Green Clean Working Group (Working Group) made up of volunteer school boards representing procurement, school board officials and facilities management staff and two CUPE representatives.

The Working Group's objective was to identify best practices in developing and implementing a green clean program and to create a comprehensive program that would be easy for school boards across the province to adopt. The final product of this work is the *Ontario Green Clean Program Resource Guide*.

3. Why is the school board adopting a green clean program?

Across North America, school boards and commercial property managers are adopting green clean programs for the following reasons:

a. A green clean program is better for building occupants

- because using less toxic cleaning chemicals to clean a school means:
  - custodian are working with chemicals that pose fewer health and safety risks;
  - occupants are exposed to fewer residual chemicals; and
  - the risk of an occupant having a negative reaction, such as an asthma attack or scent sensitivity to residual chemicals is reduced.

"My hands used to be dry using the old cleaning products."

"The new products do not hurt my lungs and hands anymore."

b. A green clean program is better for the environment

- because the use and disposal of cleaning products impacts the quality of our air, water, and land
- because the focus of a green clean program is about:
  - i. using more environmentally responsible chemicals to do the same job
  - ii. using preventative strategies to reduce the amount of dust and dirt from entering a school
  - iii. using new technologies to permanently remove more dust and dirt
  - iv. using fewer chemicals to do the same job
  - v. using fewer resources like water, electricity, etc. to do the same job

"This new canister vacuum is great, I'm not breathing in the dust anymore."

"The new bathroom cleaner is great, it cleans well and removes smells effectively for days".

Custodians who participated in the pilot program

4. What are the key concepts in successfully implementing a green clean program?

A green clean program is a lot more than having custodians substitute green clean products for traditional cleaners. From the pilot program, three key concepts were identified as critical to the successful adoption of a green clean program:

a. A green clean program is a change management initiative

For a green clean program to be successful, all stakeholders – students, teachers, staff and community users must adopt a new philosophy toward cleaning and make specific changes to their daily behaviour.

b. A partnership approach works best

Both internal and external stakeholders have responsibilities and a role to play in the implementation of a green clean program.

As a result, a school board should form partnerships with its main stakeholder groups:

- to allow stakeholders an opportunity to provide meaningful input into the development of a green clean program
- to create a two-way dialogue with partners to quickly identify barriers and resolve them and build support for the green clean program
- to develop a collaborative culture where individuals have a vested interest in the long-term success of the initiative

c. A green clean program is evolutionary

A green clean program is a long-term initiative that will evolve and become more “green” over time.

As a green clean program matures:

- a school board will phase out current chemicals and equipment and replace them with green clean products and equipment as effective alternatives are identified and as their budget allows
- stakeholders will learn how they can support the green clean program and their day-to-day behaviours will gradually be modified and become the norm
- the green clean industry will continue to invest in research and development of new, greener products and technology that will

become available in the marketplace and redefine the meaning of "green"

5. What is a certified green clean product?

"Cleaning has been made easier through new equipment."

Pilot program participant

There are two independent organizations that have been established to evaluate and verify the environmental claims of cleaning products – EcoLogo and Green Seal.

Both organizations have developed rigorous and scientifically relevant criteria that examine the entire lifecycle of a product from raw materials to disposal. The certification process involves a third party auditors reviewing each product against the criteria and comparing it to products in the same category.

Since it is expensive for a manufacturer to certify each product, most products will only be certified by one organization. However, EcoLogo and Green Seal recognize the certification standards of each other and are considered interchangeable.

Green clean standards	Background
EcoLogo™	EcoLogo was founded by the Government of Canada in 1988.
Green Seal	Green Seal is a US not-for-profit organization devoted to environmental standard setting, product certification and public education and was founded in 1989.

6. Do green clean products really work?

Yes, green clean products work **as well or better** than traditional cleaning products.

The green clean industry began two decades ago as a special interest market with products that dramatically ranged in effectiveness and cost.

Today, the green clean industry is a mainstream market with multi-billion dollar revenues. Every major manufacturer offers a basic line of green clean products and is investing in the research and development of new products in an effort to increase its business share of this competitive market.

However, it is important to note that while green clean products work, they don't all work the same way and some products may be more effective in specific settings than others.

7. Has a green clean program ever been implemented in a publicly funded school in Ontario?

Yes, many school boards across the province have begun to implement green clean programs.

As part of the development of the *Ontario Green Clean Program Resource Guide,* the Ministry of Education asked four school boards and 16 schools, to pilot the proposed program and see if it is practical. The results of the pilot program positively confirmed that school boards can benefit from implementing green clean programs.

8. What were the results of the pilot program?

a. Green clean products

- The total number of cleaning products used in the 16 schools decreased from 112, prior to the pilot program's launch, to 89 during the pilot program
    - a single green product often replaced several conventional products;

- 61 out of a total of 89 products used were certified green clean products, reflecting an adoption rate of 69%; and
- safety was enhanced because custodians were exposed to fewer chemicals and even the "safest" product presents risks.

b. Performance of green clean products

- At the initial launch of the green clean program pilot, some custodians were concerned about the effectiveness of green clean products given past experiences and/or common concerns.

- At the end of the pilot program, custodians reported that certified green products met or exceeded their expectations. Certified green products were deemed to be comparable to the traditional products that they replaced in terms of cleaning performance.

- There were two reported incidents where the green clean products/equipment did not perform as required:

"With the new green product, the bathroom cleaning is quicker, and the vacuum is much better, the program has not increased my workload, in most cases, the workload is the same."

Pilot program participant

  - **Issue # 1: Technical problem with a dispensing system and dilution rates**

    Custodians were concerned that a dispensing system was incorrectly working and an inappropriate amount of cleaning product was being dispensed.

    Findings:

    - As a result of the excess cleaner, some custodians bypassed the dispensing system, manually dispensing concentrated product, which raised ergonomic issues.

    - The size of the tip on the dispensing system was incorrect, which resulted in more cleaning product being dispersed than required.

    Resolution:

    - The vendor replaced the tips on all dispensing systems with the correct sized tip and did some retraining on-site

    Lessons learned

    - Identify problems early and partner with your vendor to find an acceptable solution
    - When a product is not working, it does not mean that it is not effective, there may be a simple solution available

- **Issue # 2: Floor finish left a white powder residue**

  Custodians applied an approved green clean floor product in the gym, hall and change room areas of a secondary school. After the finish was applied, a white powder formed on the surface of the floor tiles, which made them slippery and raised safety concerns.

  Findings:

  - The product was applied according to label instructions.
  - Due to time constraints, the vendor did not have an opportunity to train staff on the differences of coverage and application of the new product in comparison to the previous product prior to implementation.

  Resolution:

  - The gym and affected areas were closed while custodians reapplied the conventional finish.
  - School boards should test product in a small area before applying to a large area in the school.
  - The school board attributed the failure of the floor finish to the product itself, and plans to look for an alternative green floor finish.

  Lessons learned:

  - Ensure custodians get the proper training before launching a new product to maximize proper use.
  - This process will allow school boards to save time in the long run and to strengthen custodian buy-in, as the likeliness of products misuse will be decreased.

"The glass cleaner works much better and this has positively affected my workload by reading the time I need to spend on glass cleaning."

Pilot program participant

9. What if a green product doesn't work?

"With everyone thinking more about "green", there has been less daily garbage which has reduced my workload."

It is possible that a green clean product may not be effective in your facility. This is no different than traditional cleaning products. Each green clean product is different and will work better in some settings than others.

If you think a green clean product is not working effectively, try the following:

a. Check the instructions to make sure you are using the product correctly

b. Identify situations where the product works and where it doesn't

c. Notify your lead custodian or supervisor about your concerns

d. Have your supervisor ask the vendor to come in and work with you to identify:
   - why the product isn't working and minor adjustments in process that could make it effective; or
   - a new green clean product that will work effectively in your school.

10. Does a green clean program mean more work for me?

At the launch of the green clean program at each of the pilot school boards, custodians raised the concern about potential negative impacts on their workload.

However, after interviews with 45 custodians who participated in the pilot program, it was determined that the impact on workload was neutral.

"Only the initial setup of green products took some more time."

"Vacuuming took up more time, but using microfibre cloths took less."

Pilot program participants

Custodians observed two impacts on their workload:

a. It took a little time to get used to the changes to the day-to-day job, but the overall work involved in a green clean program was neutral.

b. Some tasks now took longer; but some tasks now took less time, so overall the impact was neutral.

11. Where do I fit into the green clean program?

A green clean program is a collaborative effort involving a wide range of both internal and external stakeholders.

As a custodian, you play a key role in implementing a green clean program in your school. Your day-to-day job is going to be effected by the school board's decision to implement a green clean program because you will be required to use new products, new equipment and possibly use new strategies to clean your school.

However, custodians are also the ambassadors of the green clean program in their schools, encouraging other internal stakeholders such as students, teachers, to participate and promote the initiative by explaining many of the benefits such as better indoor air quality, better environmental stewardship and how those impact the health of occupants. Students, principals, teachers and other building occupants will need your advice on the best ways to support your work and the green clean program.

A clean, safe, healthy school environment is the responsibility of **all** building occupants.

APPENDIX B

Green Clean Program Resource Guide

Things the School Community Should Know

March 2010

THE ASHKIN GROUP, LLC
The Green Cleaning Experts

ΠωX

8 things you need to know about the green clean program

1) What is the Ontario Green Clean Program?

2) Why is the school board adopting a green clean program?

3) Has the green clean program ever been implemented in a publicly funded school in Ontario

4) What were the results of the pilot program?

5) What are the key concepts in successfully implementing a green clean program?

6) Why should I care about the green clean program?

7) How may I contribute to the success of the green clean program?

8) What am I expected to do?

1. What is the Ontario Green Clean Program?

The purpose of the Ontario Green Clean Program is to promote a high-quality, healthy indoor environment in Ontario schools for students, staff, and other occupants through the use of effective, environmentally-responsible, certified green products and cleaning processes.

2. Why is the school board adopting a green clean program?

Green clean programs are being embraced by school boards across North America for the following reasons:

a. A green clean program is better for students, teachers, staff and community users

- Using certified green cleaning chemicals to clean a school means:
  - improved indoor air quality, as there are generally fewer residual chemicals in classrooms; and
  - the risk of someone having a negative reaction, such as an asthma attack or scent sensitivity, to residual chemicals is reduced.

b. A green clean program is better for the environment

- The use and disposal of cleaning products impacts the quality of our air, water, and land
- The focus of a green clean program is about:
  - using more environmentally responsible chemicals to clean the school;
  - using preventative strategies to reduce the amount of dust and dirt from entering a school;
  - using new technologies to permanently remove more dust and dirt, as opposed to moving it from one place to another;
  - using fewer chemicals to clean the school as frequently a single green clean product can replace several traditional cleaners; and

- using less resources like water, electricity, etc. to clean the school.

3. Has a green clean program ever been implemented in a publicly funded school in Ontario?

Yes, many school boards across the province have begun implementing green clean programs.

As part of the development of the *Ontario Green Clean Program Resource Guide,* the Ministry asked four school boards, including 16 schools, to pilot the proposed program and see if it is practical.

4. What were the results of the pilot program?

The pilot program was a success with all four school boards, indicating that they intend to expand their green clean program by:

- continuing to replace traditional cleaning products with green clean products (some school boards indicated a goal of 100% adoption for daily cleaning products);
- adopting new technologies and techniques that support a green clean program; and
- increasing the number of schools within the school board that participate in the green clean program.

During the pilot program, schools:

- reduced the number of cleaning chemicals used from 112 to 89;
- 61 of the 89 cleaning products used were certified “green clean”, reflecting an adoption rate of 69%; and
- evaluated the option to expand their recycling program to include the collection of organic waste in green bins.

5. What are the key concepts in successfully implementing a green clean program?

A green clean program is a lot more than having custodians substitute green clean products for traditional cleaners. From the pilot, three key concepts were identified as critical to the successful adoption of a green clean program:

a. A green clean program is a change management initiative

For a green clean program to be successful, all stakeholders – students, teachers, staff and community users must adopt a new philosophy toward cleaning and make specific changes to their daily behaviour.

b. A partnership approach works best

Both internal and external stakeholders have responsibilities and a role to play in the implementation of a green clean program.

As a result, a school board should form partnerships with its main stakeholder groups:

- to allow stakeholders an opportunity to provide meaningful input into the development of a green clean program;
- to create a two-way dialogue with partners to quickly identify barriers and resolve them; and build support for the green clean program; and,
- To develop a collaborative culture where individuals have a vested interest in the long-term success of the initiative.

c. A green clean program is evolutionary

A green clean program is a long-term initiative that will evolve and become more “green” over time.

As a green clean program matures:

- a school board will phase out current chemicals and equipment and replace them with green clean products and equipment as effective alternatives are identified and its budget allows;
- stakeholders will learn how they can support the green clean program and their day-to-day behaviours will gradually be modified and become the norm; and

- the green clean industry will continue to invest in research and development of new, greener products and technology, which will become available in the marketplace and redefine the meaning of “green”.

6. Why should I care about the green clean program?

The responsibility of a clean, safe, and healthy school is a shared responsibility. Every individual who enters a school has an impact on the building and the actions that will be required to make it clean for the next day.

Whether you are a student, staff or community after-hours user, you have a responsibility to manage your behaviour to support the goals of the green clean program.

7. How may I contribute to the success of the green clean program?

We all can do little things to minimize the quantity and the type of the chemicals required to clean a school on a daily basis.

Priority #1: Prevention

The charts below highlights both wanted and unwanted behaviours and the rationale.

The Dos and Don'ts for green clean

Wanted behaviour	Rationale
Kick mud, slush, snow off shoes/boots before entering the school	• If less dirt enters the school, it reduces both the quantity of cleaning done and the quantity of cleaning product used.
Recycle, Reduce and Re-Use	• Maximizes the quantity of materials that are recycled and can be used again • Minimizes the quantity of material that is sent to a landfill, which is bad for the environment and expensive for a school board's budget

Unwanted behaviour	Rationale
Doodling on desks and other furniture	Removal of graphite, crayon, pen, paint, gum, and residual adhesive from furniture, lockers, walls and brick surfaces requires harsh, toxic cleaning chemicals.
Graffiti (paint) on exterior walls	
Stickers in lockers	
Gum (any place other than the garbage)	
Food • **Left overnight in lockers** • **Crumbs in desks and outside designated eating areas**	Attracts pests such as ants, cockroaches, mice, which require pest controls that contain toxic chemical components.
Wearing outside running shoes or black-soled shoes in the gym	These leave marks on the gym floor which means the floor has to be refinished more frequently. Floor strippers and cleaning products contain harsh toxic chemicals.

Priority # 2: Early intervention

Anyone who has ever cleaned up a mess knows that it is a lot easier to do it immediately than to wait until it has set in or spread. Cleaning a school is no different. When accidents are immediately cleaned up it takes less time and fewer chemicals.

Occupants should immediately report to the custodian:
- liquid spills;
- soiled carpet; and,
- spilt materials such as pencil shavings, crayons etc that can be ground into the floor.

8. What am I expected to do?

In a green clean program, everyone has responsibilities and a role to play.

Students

Students make up the largest number of people in a school, so when you make small changes in what you do, it makes a big impact on how your school is cleaned.

- Keep your desk and locker food free (overnight)
  Why?
  - Attracts ants, cockroaches and mice;
  - Pests quickly multiply; and
  - Pest control uses harsh, toxic chemicals.

- Eat only in designated areas
  Why?
  - Limits the number of areas in the school that pests are attracted to.

- Put trash in the garbage
  Why?
  - Trash on the floor gets kicked around and ground into the floor, which then requires chemicals to remove it.

- Put recyclable materials in the correct recycling bin
  Why?
  - It only takes a couple of seconds to do it right.
  - It takes decades for a recyclable product to decompose in a landfill.

    - If you put a recyclable item in the wrong bin, some municipalities consider the bin contaminated and will ship the entire container to landfill.

- Kick snow, slush, and mud off your shoes/boots before you enter the school
  Why?
  - Limits the amount of dirt and debris that comes into a school.
  - Less dust needs to be removed.
  - Fewer chemicals are used to clean the school.

- Only wear indoor shoes with white soles in the gym
  Why?
  - Outdoor shoes/boots can leave black marks.
  - Black-soled shoes can leave black marks on the floor.

- Put gum in the garbage
  - Removing it from furniture, etc. requires the use of harsh chemicals.

- Wash your hands after you use the washroom
  Why?
  - It stops the spread of germs.

- Notify your teacher or custodian when something needs to be cleaned
  Why?
  - It's easier to clean up a spill when it happens.
  - The longer a spill sits, the more chemicals are going to be required to clean it up.

- Support your custodians
  How?
  - Identify three things you can do as an individual that will reduce the quantity of chemicals that are used to clean your school.

- Get involved
  How?
  - Volunteer to help your school's Environmental Club or Green Clean Team; and,
  - Become more aware of your impact on the environment.

Teachers

As role models to students, you set the culture in your class and have an opportunity to positively influence the next generation's attitudes toward key issues such as environmental sustainability.

- Understand the benefits of implementing a green clean program at your school
  - The *Green Clean Program Resource* Guide has a lot of useful information that you can use.
  - Integrate green clean concepts in your classes, for example:
    - Science
      - Test the decomposition of a biodegradable bag through a science experiment
      - Product evaluation – effectiveness, chemical composition, etc.
    - Art
      - Discuss the challenge of how to illustrate a concept that is "invisible"
      - Create a classroom display or poster to increase awareness
    - Math
      - Audit recycling and garbage for a day
      - Business
      - Cost-benefit analysis of moving to a green clean program
      - Calculate payback periods on new technology

- Incorporate the green clean program to current environmental programs at your school:
  - Ontario EcoSchools or Earth Care programs
  - Dearness Environmental Society
  - Ministry of Environment initiatives

- Support your custodians
  - Have your class identify one or two key behaviours that it will modify over the next semester to reduce the quantity of chemicals that are being used to clean the school.

Principals

As the school's leader, you set the school's culture and your public support of the green clean program sets an example for all staff and students about the importance of the initiative to the school as a whole.

- Read the essential parts of the *Green Clean Program Resource Guide:*
  - Read the executive summary
  - Understand the philosophy and key benefits of the program

- Support your custodial staff in the implementation of the green clean program
  - Demonstrate your commitment to the implementation of the program

        - Publicly acknowledge success stories and individual achievements
        - Listen to custodians' input on the green clean program and ensure that their voices are heard within the school board
        - Identify specific behaviours that the custodians want occupants to modify to support the program and promote them to all stakeholders
    - On a day-to-day basis, you may be asked to provide direction and leadership to staff and students.

- Promote the green clean program to staff, students and community users
    - articles in the school newsletter or website
    - public announcements
        - homeroom
        - assemblies
    - parent councils

- Link environmental clubs and the green clean program
    - Take advantage of existing environmental clubs and their infrastructure
    - If your school doesn't already have an environmental club, support the creation of one.
    - identify a green clean champion
        - Identify an individual within your school who will inspire stakeholder groups to become enthusiastic about the benefits of adopting a green clean program.
            - A green clean champion could be a teacher, custodian or other staff member, such as:
                - teachers who are already active in Ontario EcoSchools, Earth Care or other environmental initiatives;
                - custodians who have a good rapport with teachers and students; or
                - someone who is passionate about the program.

Custodians

As the school board and each school's primary partner in establishing a green clean program, you are the foundation on which the initiative is built.

- Use green clean products where possible
- Follow the product instructions exactly - minimizes the quantity of chemicals used
- Adopt new methods of cleaning
- Identify opportunities to reduce or eliminate toxic chemicals
- Provide the principal and facility managers with honest feedback about products:
  - If the new green clean product isn't working, let your supervisor know; it can be replaced by another green product that effectively does the job.
- Notify staff and administrators and provide a reasonable time in advance
- Talk to students and staff about what they can do to reduce the number of chemicals that are required to clean the school.

Community Users

While community users may enter a school only once a week to participate in an ongoing club/class or even less frequently to attend special events, they still have an opportunity to make a significant positive impact on a school's green clean program.

- review and comply with the Wanted and Unwanted Behaviours listed above
- support the day-to-day efforts of the students and staff because the program works best when everyone modifies their behaviour

APPENDIX C

Appendix C – Summary of Leading Practices for Green Clean in Schools

a) Strategic Direction

Indicator	Leading practice
i.) Formal policies	The school board has developed a green clean policy that clearly expresses its support of the initiative, clearly defines the roles and responsibilities, and formalizes the commitment of time and resources to implement the program.
ii) Stakeholder involvement	The school board has involved both internal and external stakeholders in the development of the green clean program and the Board of Trustees fully supports of the initiative.
iii) Green clean standards	The school board has formally adopted widely - accepted green clean certification standards such as EcoLogo or Green Seal. Non-certified products should respect the ISO 14000 eco-labelling policy.
iv) Business case	The school board has developed a formal business case to implement a green clean program, which identifies quick wins and long-term benefits of adoption through the presentation of quantitative and qualitative data.
v) Goal setting	The school board has developed a documented a green clean program based on SMART goals (Specific, Measurable, Accepted, Results-based and Timely) and includes specific strategies and implementation steps for meeting these goals.

b) Operational Framework

Indicator	Leading practice
i) Operating procedures	A green clean standard operating procedures (SOP) manual has been developed to reduce general health consequences, accommodate populations with special needs, and reduce environmental impacts. The school board monitors compliance of the procedures by conducting compliance checks and audits.
ii) Green clean products	The school board has developed an inventory of existing cleaning products for the following categories: aerosols, floor finishes, floor care systems, chlorinated and ammoniated cleaners, disinfectants, furniture polish, dusting compounds, metal polish, drain openers, and grease trap products. The inventory list has over 80% of certified green clean products on it.
iii) Selection criteria	The school board has developed a series of qualitative and quantitative criteria to select green clean products and services and a periodic formal review of all products, etc. to ensure that the program is as green as possible.
iv) Green clean equipment and supplies	The school board has developed an inventory of existing cleaning equipment. The school board considers three factors when procuring equipment and supplies: appropriateness, effectiveness and usability.

Indicator	Leading practice
v) Forms and checklists	Inspection forms and checklists, including logs, are available to custodians and maintenance staff. Forms are easily accessible by interested parties, e.g. available on the school board's website or on site notices.
vi) Infection control	The use of green products and supplies is formally integrated into the school's health and safety policies, including infection control and is aligned with local public health unit policies.
vii) Paper and plastic products	The school board has developed guidelines on the use of green paper and plastic products to supplement its green clean policies.
viii) Auxiliary services	The school board's auxiliary services (i.e. food preparation, cafeteria, child care centres) are aligned with the green clean program where possible.
ix) Procurement	The school board has updated its procurement practices to take into account green clean requirements. The school board's vendors are familiar with the green clean program, its strategic direction and operating procedures.
x) Inspections and audits	Custodians maintain appropriate logs and records to track the implementation of the green clean program. The green clean team should conduct reviews of the program, every three to six months in the first year, then on an annual basis.
xi) New technologies	The school board has evaluated the merits of using newer technologies based on: appropriateness, effectiveness and usability.

c) Culture and awareness

Indicator	Leading practice
i) Stewardship	The school board promotes a culture of environmental stewardship to both internal and external stakeholders. The school board links the green clean program with the concept of environmental stewardship.
ii) Organizational structure	The school board has a dedicated Green Clean Champion. The school board has a green clean team which includes representatives from among the following groups: administrative staff, facility operators, custodians, union representatives, health officers, teachers, parents, students and vendors.
iii) Roles and responsibilities	The role and responsibilities of the Green Clean Team are clearly defined and articulated. The role and responsibility of each stakeholder group and are clearly defined and promoted to everyone.

Indicator	Leading practice
iv) Training	The school board has provided comprehensive training to custodians on new cleaning products, equipment and procedures. Training should include: product usage, associated workload and scheduling requirements. Training and education activities should also be put in place for students, staff and community users to create stakeholder buy-in and encouraging individuals to modify their behaviour to support the program.
v) Communication channels	The school board has developed a communication strategy which involves the use of multiple media to reach important constituencies. The media used by the school board to communicate "green clean" are most appropriate for the audience or particular message being communicated.

d) Outcomes

Indicator	Leading practice
i) Tracking progress	The school board established baseline data prior to the implementation of the green clean program. After implementation, the school board regularly measures key indicators, such as indoor air quality, odour levels, water quality, and CO^2 and dust levels.
ii) Objective measures	The school board tracks the following objective measures: • the number of green cleaners piloted; • the number of training workshops held for staff and number of participants; • the number of indoor air quality and other cleaning-related complaints; • the amount of trees (paper products) saved by switching to recycled paper; • the amount of toxic chemicals avoided; and • the amount of materials eliminated from the waste stream through recycling and other source reduction efforts.
iii) Subjective measures	The school board tracks subjective measures through surveys, "town hall" meetings or assemblies or group sessions. Qualitative measures are used as a communication tool to build stakeholder support.
iv) Achievements	The school board formally recognizes: • schools that have adopted a green clean program in the past year; • schools that have hit targets for waste reduction or percentage of green clean products used; • custodians who have identified / created best practices in implementing a green clean program; and • students / staff who have made a major contribution to the adoption of a green clean program in their school.

APPENDIX D

Appendix D – Guide to Evaluate a Green Clean Program

The following template could be used by school boards to evaluate a green clean program once it has been formally implemented. The template provides a basic structure for reporting purposes, and covers three measurement attributes: performance measurements, environmental physical attributes and stakeholder impact. These attributes are further broken down into qualitative or quantitative elements. Suggested data collection considerations are also provided.

a) Performance measurements

Management attribute	Objective	Subjective	Data collection considerations	Comments
Costs	✓		Analysis by the school board's Procurement Department of Bofthe costs of each green clean product used, classified into annual costs by school and by category	Track monthly and report quarterly
Attendance management	✓		Attendance data	Periodically as determined by the school board
Indoor air quality	✓		Test: • carbon monoxide • relative humidity • environmental smoke • fine particulate matter • lead • nitrogen oxides • radon • pesticides	Most school boards use an incident-based testing procedure. Suggest annual testing by outside consultants
Water quality, including hard or soft, well, or septic tanks	✓		• pH Levels, lead levels	Incident-based and annual lead testing
Product effectiveness		✓	Discussions, interviews, surveys with key school staff members	first year – weekly second year - quarterly
Odours		✓	Odour–free: • washrooms • kitchen • waste baskets (should be emptied)	Weekly

Management attribute	Objective	Subjective	Data collection considerations	Comments
Dust		✓	The following are clean and clear of debris: • counters • equipment • carpets and blinds • glass (free of smears) • stairwells and hallways • corners and baseboards • floors (finished) • walls (and free of spots) • furniture, including students' desks, lockers, benches and chalkboards • vents/filters • ceiling tiles clean • drinking fountains (and operational) • washrooms	Weekly

b) Environmental physical attributes

Management attribute	Objective	Subjective	Data collection considerations	Comments
Age of facility categorized into less than 10 years old; 20 to 30 years old; and 40+	✓		Age of facility	Update as required
Student density	✓		• Students per square foot • Students per staff member	Update as required
Custodians		✓	Interviews, surveys, walk-throughs	Monthly

c) Stakeholder Impact

Management attribute	Objective	Subjective	Data collection considerations	Comments
Plant officials / school board officials		✓	Interviews, surveys, walk-throughs	Quarterly
Students / teachers / principals / trustees		✓	Interviews, surveys, walk-throughs	Bi-annually
Community		✓	Interviews, surveys, walk-throughs	Annually

APPENDIX E

Appendix E – Pilot Reporting Template

The following template was developed to assist a school board that is piloting a green clean program to track the adoption of certified green clean products at individual sites. School boards may use this template for reporting purposes during the implementation of a green clean program at a school or across a school board, or modify it to meet their needs.

The template used is titled, for "Daily Cleaning Products" but can be easily modified to track other categories such as:

- Floor care products;
- Carpet care products;
- Paper products; and
- Other categories as the school board sees fit.

Daily cleaning products* before, during and after a pilot									
	PRE-PILOT			DURING the Pilot			POST- PILOT		
Pilot sites	Total number of products used	Number of green clean products used	Percentage of green products used	Total number of products used	Number of green clean products	Percentage of green clean products used	Total number of products used	Number of green clean products	Percentage of green clean products used
Site A									
Site B									
Site C									
Site D, etc.									

* Daily cleaning products: dispensing system, neutral detergent, germicidal detergent (disinfectant), mark remover, glass cleaner, metal cleaner/polish, washroom cleaner, bowl cleaner, hand soap, sanitizers (if used), dust mop spray, garbage bags and drain cleaners

APPENDIX F

Appendix F – Green Product Usage Data Template

The following data collection template was developed during the pilot of the Ontario Green Clean Program to document the usage of certified green clean products and equipment at each pilot site. This is a more detailed version of the previous template. A school board may choose to use the template during a pilot phase or modify it for long-term reporting purposes.

A total of 36 types of products organized under four categories (cleaning supplies, floor care, carpet care, paper products and cleaning equipment) can be tracked by product name, number of products used before, during and after the pilot. This standard data template can be utilized to compile an inventory of products used and determine the level of adoption of green clean products by site.

The data template also identifies usage trends with regards to product brands, choice of Eco-logo, or Green Seal certified products, and reasons for sites to either adopt a green clean product or not.

Name of site		GREEN PRODUCT USAGE DATA TEMPLATE										
PRODUCT CATEGORY	TYPE OF PRODUCT	PRODUCT BRAND NAME	PRE-PILOT			PROCUREMENT POLICY	GREEN CLEANING CERTIFICATION STANDARD	PILOT PRODUCT CHANGES	DURING THE PILOT			COMMENTS indicate whether or not the site will continue with the products If not, provide a rationale
			Total number of products used	Number of green products used	Percentage of green clean products used				Total number of products used	Number of green clean products adopted	Percentage of green products used	
Cleaning supplies	Dispensing system											
	Neutral detergent											
	Germicidal detergent (disinfectant)											
	Mark remover											
	Glass cleaner											
	Metal cleaner/polish											
	Washroom cleaner											
	Bowl cleaner											
	Hand soap											
	Sanitizers (if used)											

Name of site		GREEN PRODUCT USAGE DATA TEMPLATE										
PRODUCT CATEGORY	TYPE OF PRODUCT	PRODUCT BRAND NAME	PRE-PILOT			PROCUREMENT POLICY	GREEN CLEANING CERTIFICATION STANDARD	PILOT PRODUCT CHANGES	DURING THE PILOT			COMMENTS indicate whether or not the site will continue with the products If not, provide a rationale
			Total number of products used	Number of green products used	Percentage of green clean products used				Total number of products used	Number of green clean products adopted	Percentage of green products used	
	Dust mop spray											
	Garbage bags											
	Drain cleaners											
Floor care products	Finish restorer / spray buff maintainer											
	Stripper											
	Floor sealer											
	Floor finish											
	Wood floor finish											
	Rinse products											
Carpet care products	Spot remover											
	Gum remover											
	Pre-spray											
	Shampoo											
	Extraction cleaner											
Paper products	Toilet tissue											

Name of site		GREEN PRODUCT USAGE DATA TEMPLATE										
PRODUCT CATEGORY	TYPE OF PRODUCT	PRODUCT BRAND NAME	PRE-PILOT			PROCUREMENT POLICY	GREEN CLEANING CERTIFICATION STANDARD	PILOT PRODUCT CHANGES	DURING THE PILOT			COMMENTS indicate whether or not the site will continue with the products If not, provide a rationale
			Total number of products used	Number of green products used	Percentage of green clean products used				Total number of products used	Number of green clean products adopted	Percentage of green products used	
	Hand towels											
	Paper towels											
Cleaning equipment	Dust mopping system (microfibre, yarn mop heads)											
	Wet mopping system (microfibre, yarn mop heads)											
	Upright vacuums (paper bags, cloth bags, bagless)											
	Other vacuums (type, bags, bagless)											
	Auto scrubbers (age, pads or brushes)											
	Floor machines (age, pads or brushes)											
	Burnishers (electric, propane)											
	Cleaning cloths/rags (microfibre, cloth)											
	Carpet cleaners (shampoo, extractor)											

APPENDIX G

Appendix G – Current State Analysis Lines of Inquiry

The following lines of inquiry were developed during the pilot of the *Green Clean Program Resource Guide* to assess the current state of adoption of leading practices. The template could be used by school boards during the pilot of a green clean program, or may be modified as a reporting tool for annual reviews.

a) **Strategic direction**

Indicator	Lines of inquiry	Response
Formal policies	• What formal policies exist to support the long-term use of green clean products and methods? What is the scope of the policies? • How was the policy developed? How was the policy communicated? Who developed the policy? • Has the policy been formally approved by the Board of Trustees?	•
Stakeholder involvement	• Who are the school board's internal and external stakeholders? Which stakeholder groups have a representative who has been involved with the development of the school board's green clean program? • Does the green clean strategy have the full support of the Board of Trustees? • What previous discussion has taken place at school board meetings and what were the outcomes?	•
Green clean standards	• What relevant standards (i.e. EcoLogo, Green Seal) with respect to green clean is the school board aware of? • Which of these standards does the school board plan to, or is obliged to, adhere?	•
Business case	• Has the school board developed a formal business case for implementing a green clean program? • What qualitative and quantitative factors were considered in the development of the business case?	•

Indicator	Lines of inquiry	Response
Goal setting	• Has the school board developed a set of "SMART" goals (Specific, Measurable, Attainable, Realistic and Timely) for its green clean program?	•

b) Operational Framework

Indicator	Lines of inquiry	Response

Operating procedures	• What types of formal operating or administrative procedures exist for the following:
	  • reduce general health consequences of cleaning on occupants, e.g. How are products used to minimize exposure to VOCs[3], dusting techniques, order of cleaning activities?
	  • accommodate occupants with special needs – e.g. change the frequency or timing of cleaning activities to accommodate students with allergies or chemical sensitivities or pregnant women.
	  • reduce environmental impact – e.g. how does the school board prevent or minimize disposal of harmful chemicals into water, air or land? Do the school board's pest control procedures consider the impact on the environment?
	• How does the school board ensure compliance with its operating procedures? Who is responsible for conducting compliance checks? What are the results?
		•

Green cleaning products	• Has the school board developed an inventory of existing cleaning products for the following categories:
	  • Aerosols
	  • Floor finishes, floor care systems
	  • Chlorinated and ammoniated cleaners
		•

[3] Volatile Organic Compounds

Indicator	Lines of inquiry	Response
	• Disinfectants • Furniture polish, dusting compounds, metal polish • Drain openers, grease trap products • Graffiti removers, gum removers • Lime and scale removers • Grout cleaners • Infection control products	

Selection criteria	• What is the criteria the Product Selection Committee uses in terms to identify green clean products? Examples include:
	  • Reduction of health risks
	  • Pollution prevention
	  • Sustainability
	  • Cost
	  • Ease of procurement / accessibility
	  • Vendor relationships
	  • Multiple attributes
	  • Contains no known, probable, or possible carcinogens
	  • Has a neutral PH; non-irritating to eyes and skin; no acute or chronic health hazards
	  • Free of VOCs
	  • Use disinfectants only when required by Ontario legislation, e.g. Day Nurseries Act, Food Premise Regulation
	  • Avoid fragrances and dyes
	  • Non-flammable
		•

Indicator	Lines of inquiry	Response
	• Non-reactive • Not packaged in aerosol/spray cans • Provide dispensing systems that minimize exposure to concentrated solutions • Biodegradable • Contains no ozone-depleting chemicals • Disposal is not considered as a hazardous waste • Can be used for more than one task (multi-purpose cleaners) • Made from or contain ingredients from renewable resources • Sold with reduced packaging • Packaged in a refillable or recyclable high density polyethylene (HDPE) or polyethylene terephthalate (PET) container • Does the school board and school keep a list of Material Safety Data Sheets (MSDS) sheets for each product? • What analysis or consideration is given to the green clean product lifecycle? Examples include: • Raw materials • Transportation • Manufacturing • Storage • Usage • Disposal • What type of formal certification does the school board seek for its green clean products and equipment?	

Indicator	Lines of inquiry	Response

Green cleaning equipment and supplies	• Has the school board developed an inventory of existing cleaning equipment for the following categories:
	  • Mops, brooms, window cleaners, washroom-specific equipment, classroom-specific equipment, hallway-specific equipment
	  • Vacuums, backpack vacuums
	  • Carpet extractors
	  • Automatic scrubbers
	  • Buffing or burnishing equipment
	  • Spray and vac “No Touch” cleaning systems
	  • Vapour cleaning devices
	• Has the school board developed an inventory of existing cleaning supplies for the following categories:
	  • Hand soaps and sanitizers
	  • Floor mats
	  • Paper towels and toilet paper
	• What selection criteria does the school board use in terms of selecting green equipment and supplies? Examples include:
	  • Appropriateness
	  • Effectiveness and Cost
	  • Procurement ease/accessibility
	  • Supplier relationships
	  • Usability, noise and vibration levels, user fatigue
	  • Safety features (rollers, rubber bumpers)
	  • Battery usage (type, LEED-Existing Building (ED) compliance)
	  • Reusability
		•

Indicator	Lines of inquiry	Response

Forms and checklists	• What types of forms and checklists are available to custodians and maintenance staff:
	  • Chemical inventory forms
	  • Comment sheets
	  • Daily pass down logs
	  • Inspection forms
	• Are these forms or checklists posted at visible locations throughout the school?
		•

Infection control	• How is the use of green clean products and supplies integrated into the school's health and safety policies, specifically infection control? • How does the school board ensure its use of disinfectants and detergents is aligned to its health and safety policies?	•

Paper and plastic products	• Has the school board developed associated policies regarding the use of green paper and plastic products to supplement its green clean policies?
	• Has the school board considered the following factors:
	  • Recycling content
	  • Minimizing/Maximizing post-consumer content
	  • Chlorine-free products
	  • Processed chlorine-free products
		•

Auxiliary services	• Are the school board's auxiliary services (i.e. cafeteria, daycare) aligned with the school board's green clean program? • Does the school board use a certified green clean floor care system for floors and hard surfaces? • Has the school board adopted the use of stainless steel cleaners? Are they green certified?	•

Indicator	Lines of inquiry	Response
	• Are the school board's lime and scale removers of neutral pH? • Does the school board use environmentally - preferable drain cleaners that are bio-based and use non-pathogenic microbes? • For food preparation areas, does the school use floor care products with enzyme- or peroxide-based formulas to effectively rid porous surfaces of dirt and grease? • Does the school board use ware-washing detergents that are non-caustic and contain less than 8.7% of phosphates? • Does the school board use manual detergents in triple sinks that have a neutral pH, no flash point, leave little residue, are non-caustic and biodegradable? • Are food sanitizers appropriately certified to minimize the risk of bacterial contamination?	
Procurement	• Has the school board appropriately updated its procurement practices to take into account green clean requirements? • Are vendors familiar with the school board's strategic directions and operating procedures regarding green clean?	•
Inspections and audits	• Do custodians maintain appropriate logs and records to track the implementation of the green clean program? • Are inspections conducted regularly to spot check the appearance of facilities? • Does the school board conduct more formal audits of its custodial and/or maintenance functions? How is the green clean program integrated into these audits?	•
Monitoring and reporting	• What formal reporting is available regarding the custodial and maintenance functions? • What aspects of these reports will provide management with insight on the progress of the school board's green clean program?	•

Indicator	Lines of inquiry	Response
	• How often are these reports produced? • Who has access to these reports?	

New technologies	• What is the school board's experience with regards to newer technologies such as:
	  • Electrolyzing water technology
	  • Abrasive floor pads
	  • Hand dryer improvements
	  • Micro- fiber integrated floor cleaning systems
	  • Spray and vac touch-free cleaning systems
	  • Vapour disinfecting technology
	  • Waterless urinals
	  • Energy and chemical monitoring equipment
	  • Bacterial-resistant surfaces
	  • Silver-ion technology disinfectants
	  • Soy composite for waterless urinals
		•

c) Culture and Awareness

Indicator	Lines of inquiry	Response
Stewardship	• How does the school board promote a culture of environmental stewardship among its constituents?	•
Organizational structure	• Does the school board have a dedicated green clean champion and/or green clean team? • Has the school board clearly defined the structure of its Green Clean Team? Are roles and responsibilities clear? • Are key stakeholders and school board staff sufficiently engaged and/or informed of the school board's green clean program?	•
Roles and responsibilities	• Does the school board have an in-house cleaning program, or are cleaning services provided by a third - party contractor? • If the school board has an in-house cleaning program, who has responsibility for hiring and supervising the janitorial custodial staff? • If the school board requires the services of a third - party contractor, that will implement the green clean program, who has responsibility for developing the contract requirements, selecting the contractor and monitoring the performance of the contract? What is the end date of the current contract? • Does the school board have a Product Selection Committee to make decisions about new product and equipment purchases?	•
Training	• What type of training (i.e. use of green products, supplies and equipment) is available to custodians? Is training available to other stakeholders?	•
Communication channels	• Has the school board developed a communication strategy to promote its green clean program? • Has the school board made use of the following channels to communicate its green clean program? • Annual Earth Day celebrations	•

Indicator	Lines of inquiry	Response
	• Articles in the school newsletter/website • Articles or notices sent home in students' backpacks • Classroom displays • PA system announcements • Health and safety committee programs • In-service educational programs • Internal daily, weekly logs of cleaning needs • News releases to local newspapers • Parent and Teacher Nights • Recycling events • School assemblies • Flyers or bulletin board posters • Staff e-mails • Stickers on washroom mirrors	

d) Outcomes

Indicator	Lines of inquiry	Response
Tracking progress	• Is baseline data available on the use of green clean products and supplies prior to implementing a formal program? • Does the school board regularly measure key indicators such as indoor air quality, odour levels, water quality, CO_2 and dust levels? • Who conducts the measurements? How often are they conducted? Are they conducted in the same location within each site? • How far back do the measurements go back?	•

Objective measures	• Does the school board track the following objective measures?
	  • Number of green clean products adopted
	  • Number of training workshops held and participants
	  • Number of indoor air quality and other cleaning-related complaints
	  • Number of times asthma medication was administered
	  • Amount of trees (paper products) saved by switching to recycled paper
	  • Amount of toxic chemicals avoided
	  • Amount of materials eliminated from the waste stream through recycling and other source reduction efforts
		•

Subjective measures	• Has the school board conducted any surveys to gather subjective feedback on the green clean program? • Has the school board provided an email address or phone number that can accept and record unsolicited comments? • Has the school board conducted “town hall” meetings or assemblies to collect informal feedback?	•

Indicator	Lines of inquiry	Response
Treatment of high/low performers	• Does the school board measure individual schools separately so that performance metrics are attributable to individual schools? • Are high/low-performing schools treated differently? If yes, describe. • Are the results or spread of high/low performing schools communicated to the school board's stakeholders? • Are low-performing schools held accountable for improving results and outcomes?	•

Achievements	• What real benefits were obtained?
	• Did the school achieve 80% plus certified green clean products?
	• Does the school board formally recognize:
	  • schools that have adopted a green clean program in the past year;
	  • schools that have hit targets for waste reduction or percentage of green clean products used;
	  • custodians who have identified / created best practices in implementing a green clean program; and
	  • students/staff who have made a major contribution to the adoption of a green clean program in their school.
		•

Student outcomes	• What demonstrable student outcomes can the school board attribute to its green clean program? Examples include:
	  • decrease in absenteeism for building occupants; and
	  • decrease in health and safety - related complaints.
		•

APPENDIX H

Appendix H – List of Product Types

The following table provides a list of common product types used by custodial staff in schools. The categories may be used by school boards to set up a common framework to compare different schools.

Product category	Type of product
Cleaning supplies	Dispensing system
	Neutral detergent
	Germicidal detergent (disinfectant)
	Mark remover
	Glass cleaner
	Metal cleaner/polish
	Washroom cleaner
	Bowl cleaner
	Hand soap
	Sanitizers (if used)
	Dust mop spray
	Garbage bags
	Drain cleaners
Floor care products	Finish restorer / spray buff maintainer
	Stripper
	Floor sealer
	Floor finish
	Wood floor finish
	Rinse products
Carpet care products	Spot remover
	Gum remover

Product category	Type of product
	Pre-spray
	Shampoo
	Extraction cleaner
Paper products	Toilet tissue
	Hand towels
	Paper towels
Cleaning equipment	Dust mopping system (microfibre, yarn mop heads)
	Wet mopping system (microfibre, yarn mop heads)
	Upright vacuums (paper bags, cloth bags, bagless)
	Other vacuums (type, bags, bagless)
	Auto scrubbers (age, pads or brushes)
	Floor machines (age, pads or brushes)
	Burnishers (electric, propane)
	Cleaning cloths/rags (microfibre, cloth)
	Carpet cleaners (shampoo, extractor)

APPENDIX I

Appendix I: Developing Green Clean Procedures

The following is intended to be a guide for school boards that do not currently have operating procedures for custodial staff, or as a guide for school board's adapting existing SOP for a green clean program. The guide describes the various sections that should be included in the procedure.

Introduction

Sets the stage for how the procedures will be laid out, the format to be used and any other points that will help the reader understand what is to follow.

For example, this is a description of how the tasks will be organized and explained:

The first part of this section will consider collection of procedures organized by area to be cleaned. These are:

Entryways and lobby cleaning

Elevators

General office space cleaning

Washroom cleaning

Food preparation and serving areas

The second part considers individual tasks. These are:

Vacuum cleaning and carpet spotting

Hard floor dry cleaning

Damp mopping

Wet mopping

The final part of this section discusses the appropriate processes for measuring and diluting cleaning chemicals.

Green procedures by area

Include descriptions of how the major areas of a building will be cleaned following the Green Clean SOP Manual. Typical areas include: washrooms, entryways, lobbies, stairwells, elevators and landings, conference rooms, general office areas and break rooms, etc.

There are many ways to organize the descriptions. Below is one example:

Area to be cleaned

Purpose: What is the objective in this area

Equipment list: Provide a list of all equipment to be used

Cleaning chemicals: List the chemicals used to clean this area

Tasks: A general list of tasks required to properly clean the area

Detailed procedures:

Preparations

Step-by-step procedures

Below is an example of how to describe area cleaning for **Entryways** and the **Lobby.**

Entryway and lobby cleaning

Purpose:

The entrance and lobby provide the best opportunity to capture dust, dirt and potentially harmful particles before they make their way deeper into the building. Proper and effective cleaning at this stage can dramatically improve the overall indoor environmental quality.

Equipment list:

- Microfibre dust mop, broom and/or vacuum cleaner for hard floors (choice of tool will depend on size and type of hard floor material)
- Lobby broom and dust pan
- Vacuum cleaner for carpets and walk-off mats
- Putty knife
- Wet floor warning signs or cones
- Microfibre cloths for dusting (dry)
- Microfibre cloths for damp or wet cleaning (no chemicals added)
- Microfibre cloth lightly sprayed with general purpose cleaner
- Microfibre mop and bucket with wringer for wet floor cleaning
- Cart for equipment transport
- Spray bottle (set to coarse spray pattern)

Cleaning chemicals:

- Clean water (cool)
- Neutral floor cleaner
- General purpose surface cleaner
- Disinfectant solution (if required)

***Tasks*:**

- Dust all surfaces that can be reached while standing on floor
- Spot clean glass surfaces
- Remove fingerprints, spots, smudges, etc. from wall surfaces, water fountains, countertops and other touch points
- Polish metal and wood surfaces per schedule
- Vacuum walk-off mats
- Vacuum, sweep or dry mop hard floor surfaces, collect and dispose of debris
- Empty garbage cans
- Damp mop, wet mop or scrub hard floor per scheduled services
- Clean and store equipment properly

***Detailed procedures*:**

Preparations

- Gather required equipment, tools and supplies
- Move to assigned work area

Step-by-step procedures

Step 1 - Start high and dry

- Using a microfibre cloth or tool equipped with microfibre cloth, begin dusting at the highest point reachable while standing on the floor. (Note: Use appropriate stool or ladder to reach high dust points per building schedule.) Proceed to mid level and lower surfaces until all surfaces have been dusted. Fold and refold cloth to expose clean surfaces as required.

Step 2 - Spot clean and polish

- Use the dry microfibre cloth to remove fingerprints, smudges and other marks from doors, glass, walls and other surfaces. For stubborn marks, use the microfibre cloth dampened with water or general purpose cleaner.
- Per building schedule, clean and polish metal, glass and wood surfaces using a microfibre cloth and approved cleaner/polishing agent.
- Clean and disinfect water fountains using disinfectant spray cleaner and damp microfibre cloth, and follow manufacturer's instructions for use.
- According to building- specific Green Operations Manual, disinfect "touch points" using disinfectant spray and microfibre cloth, spray the disinfectant directly onto the cloth rather than the touch points, this will limit the amount of product that goes into the air.

Step 3 - Clean floors and mats

- Sweep exterior sidewalk and vestibule. Collect and dispose of debris.
- Vacuum clean all walk-off mats and entryway grills (or sweep as required). Follow building specific Green Operations Manual for periodic cleaning of walk-off mats.
- Vacuum lobby carpets (see Vacuum cleaning specific task in next section.
- Vacuum, sweep or dust mop lobby hard floors (see dry cleaning hard floors in next section.)

Use putty knife to remove gum tar or other materials stuck to hard floors. Pay special attention to corners, edges and hard to reach areas of the entry and lobby floors.

Step 4 - Collect garbage and recycling

- Empty all garbage cans and replace plastic liners with proper size liner. Wipe down containers with microfibre cloth and general purpose cleaner.
- Empty all recycling containers into proper receptacles. Replace in proper location.

Step 5 - Wet cleaning of entryway and lobby

- Place “Wet Floor” warning signs in appropriate locations to help prevent slip - fall accidents.
- Damp mop the entry and lobby hard floors (see Hard floor damp mopping or Wet mopping).
- Perform any periodic hard floor maintenance items per building specific Green Operations Manual.

Step 6 - Pack up and go

- Collect all tools, equipment and cleaning supplies used in performing the tasks above. Put them on the equipment transport device and return to storage area.
- Clean and properly store all tools and equipment. Make note of any repairs required.
- Collect all microfibre cloths and place in designated area for laundry.
- Return all cleaning chemicals and supplies to proper locations.
- Record any irregularities in communication log and notify supervisor.

It is important that as these procedures are created, they reflect how a custodian completes the task. It is also important to look at all of the procedures in a new way - a green way. As part of the green clean program, consider the impact of how a procedure is carried out on the people who do the work, the building occupants, and the general environment.

How a task is performed impacts the cleaning products and the equipment that are used to do the job. A simple example involves replacing wool dusters with microfibre cloths. Rather than use the wool duster as a simple rag, a microfibre cloth is more effective and and when the proper method of folding and replacement is followed, they are dramatically more efficient.

Another example of how a procedure is carried out is the order of tasks in the flow of operations. When starting “high and dry” and working down toward the floor, stray soil or dust moves in a downward direction, which can then be permanently removed from the area by using a vacuum cleaner.

Re-evaluating how cleaning tasks are performed can be time-consuming and complex. For the green clean program, the team should evaluate the methodology that is currently used and keep those procedures that continue to work from a green perspective.

This re-evaluation should be conducted on a periodic basis, either annually or semi-annually, as determined by the team to ensure the best possible service is provided and identify opportunities to improve effectiveness and efficiency of the cleaning process.

Green procedures by task

As with green procedures by area, organize tasks procedures as follows:

Task to be performed

Purpose: What is the objective of this task

Equipment list: Provide a list of all equipment to be used

Cleaning chemicals: List the chemicals used to clean this area

Step: A general list of steps required to perform the task

Detailed procedure:

Preparations

Step by step procedures

The following is an example for **Vacuum Cleaning**:

Vacuum cleaning

Purpose:

Using a powered vacuum cleaner, the operator removes dirt, dust and other debris from carpeted surfaces and rugs. With the proper tools and accessories, the operator may use this tool for dry cleaning hard floors as well as carpets. The operator will also pay attention to edges corners and hard-to-access areas per the established schedule of activities. Normal, day-to-day spotting will be accomplished as part of the vacuum cleaning procedure.

Equipment list:

- Designated vacuum cleaner. The exact style and model will depend on the specific area to be cleaned. This may be a backpack, tank, or upright vacuum. All vacuums will be equipped with approved filters and disposable collection bags. If a cyclonic vacuum cleaner is employed, it will be equipped with approved post motor filters and emissions shall meet or exceed CRI standards
- Lobby broom
- Extension cord (if required)
- Microfibre wiping cloths

Cleaning chemicals:

- Approved carpet spotter or spotting kit.

Steps:

- Collect tools and equipment from storage area.
- Ensure powered equipment is in proper working order and ready to use.
- Vacuum all accessible areas of carpet (follow Building Specific Schedule for unique requirements and frequencies).

- Use lobby broom as needed to reach areas not accessible to the vacuum cleaner.
- Move in established pattern to create proper appearance.
- Use approved products to remove spots as they are encountered.
- Always operate powered equipment in a safe and appropriate fashion.
- Replace furnishings and other items in proper location.
- Inspect work, turn off lights and secure doors.
- Return to storage area, and inspect, clean, and store equipment.

Detailed procedures:

Preparations

- Gather required equipment in storage area.
- Inspect vacuum cleaner, ensure:
  - Collection bag is empty and properly installed;
  - Filters are clean and in place;
  - Brush rolls freely and bristles are not worn out;
  - Cord has no breaks, nicks or cuts;
  - Plug is properly attached and ground pin is in place;
  - Hoses are in place and in good operating condition; and
  - Belts are in place and not nicked or worn.
- Gather required equipment, tools, and supplies.
- Move to assigned work area.

Step- by- step procedures

Step 1 - Clear the way

- Move furniture to allow effective vacuuming.
- Note any damaged furniture or other irregularities and report to supervisor.
- Place vacuum in farthest corner from entry point and run cord back to entry point.
- Attach extension cord, if needed, and lay cord to facilitate vacuum pattern - plug into outlet.

Step 2 - Making waves

- Begin vacuuming in a V-pattern moving from the corner across the floor and back the other direction. Hold the cord in one hand to prevent tangling or tripping over it.
- Use the lobby broom to remove debris from edges, corners and other inaccessible areas.
- Move backward toward the entry point maintaining the V or wave pattern.
- Empty or replace collection bag (or bin) as required during the shift.

Step 3 - Spotting

- Use the approved spotting solution or kit to remove spots as they are encountered. Use the micro fibre cloths to blot excess cleaner and the spot.
- Re-vacuum as needed.

Step 4 - Inspect and finish up

- Check the area to be sure all carpets have been vacuumed properly.
- Ensure all furniture has been properly replaced.
- Check for missed spots and remove as needed.
- Turn off lights and close doors per building specifications.

Step 5 - Pack up & go

- Collect all tools, equipment and cleaning supplies used in performing the tasks above. Return to storage area.
- Empty or replace vacuum cleaner collection bag. Clean or replace filters as required. Note any repairs required.
- Return all cleaning chemicals and supplies to proper locations.

APPENDIX J

Appendix J: Sample Forms

Chemical inventory form

Product name	Manufacturer and phone number	Date of MSDS	MSDS listed ingredients	CAS #
Comments / precautionary statements / signal words / warnings:				
Comments / precautionary statements / signal words / warnings:				
Comments / precautionary statements / signal words / warnings:				

Custodial equipment inventory form

Manufacturer	Product model and serial number	Date purchased	Description (i.e. backpack vacuum, high speed burnisher, etc.)	Date of maintenance/ repair	Comments (i.e. condition, cleanliness, cords, attachments, tools, etc.)

Housekeeping audit form

Checked	Needs attention
√	√

Place a check mark in each area that has been evaluated and mark areas that need attention. Use ”Comments” for notes. Pay attention to your senses, particularly to what you see and smell. For the most favourable indoor environment, observe levels of gases, particles and bio-pollutants. Cleaning and maintenance activities must focus first on cleaning for health, and then appearance.

BUILDING USAGE, EXTERIOR AND NEIGHBOURS

Checked	Needs attention		Comments
		No changes in building usage	
		No construction, renovation or other structural changes	
		No construction, renovation or other changes affecting neighbours	
		No evidence of standing water on roofs, parking lots or grounds	
		No evidence of standing water on neighbouring roofs, parking lots or grounds	
		Potential vehicular traffic issues	

BASEMENTS AND CRAWL SPACES

Checked	Needs attention		Comments
		No evidence of moisture or standing water	
		No evidence of mould, mildew or other bio-contamination	
		Drains and sumps appear to be operational	
		No evidence of high levels of dust or debris	
		No evidence of insects, rodents or other pests	
		No evidence of dirty or ineffective air filters, pumps, back draft dampers or fans	
		No sources of VOCs (e.g. stored chemicals)	
		No noticeable odours	
		No evidence of cracks in flooring or foundation	

GARAGES, LOADING DOCKS AND SHOP AREAS

Checked	Needs attention		Comments
		No evidence of excessive dust, trash, and debris	
		Materials (e.g. paints, chemicals, fuels) are organized and VOCs are controlled through adequate ventilation (e.g. direct exhaust)	
		Floors are clean to prevent tracking and floor matting systems are utilized and in good working order	
		Vehicular exhaust is NOT impacting fresh air intakes	
		Dumpster areas are clean and located away from fresh air intakes	
		No evidence of insects, rodents or other pests	

ENTRANCES AND LOBBIES

Checked	Needs attention		Comments
		Entrance mats and floor grills are clean and in good working order Furthermore, they cover enough area to be effective (first 9 to 12 feet of the entryway)	
		Garbage cans clean and emptied daily	
		Carpets are clean and in good condition	
		Hard floors are clean, dust free and in good condition	
		Glass doors, decorative surfaces, mirrors and bright work are clean and in good condition	
		Window coverings (e.g. draperies, curtains) are clean	

STAIRS AND ELEVATORS

Checked	Needs attention		Comments
		Carpeting and flooring are clean and in good condition	
		Bright work and hand rails are clean and in good condition	
		Steps and landings are clean and free of trash and debris	

OFFICES, WORK SPACES, CLASS ROOMS AND LIVING AREAS

Checked	Needs attention		Comments
		Carpeting and flooring are clean and in good condition	
		Dust levels minimal. Dusting performed with damp cloths or microfibre cloths	
		Office partitions (especially, if fabric covered) are clean and dust free	
		Ceiling tiles exhibit no evidence of water or moisture damage	
		Telephones, door knobs and light switches are clean and disinfected	
		Window and light fixtures are clean and operating properly	
		Draperies and blinds are clean and dust free	
		Garbage cans clean and emptied daily	
		Plants exhibit no evidence of insect infestation, and surfaces under plants are clean	
		No evidence of mould, mildew or other bio-contamination	
		No evidence of insects, rodents or other pests	
		Self-contained heating and cooling units are clean, free of bio-contamination and operating correctly	

CLASS ROOM #

Checked	Needs attention		Comments
		Carpeting and flooring are clean and in good condition	
		Dust levels minimal. Dusting performed with damp cloths or microfibre cloths	
		Office partitions (especially if fabric covered) are clean and dust free	
		Ceiling tiles exhibit no evidence of water or moisture damage	
		Telephones, door knobs and light switches are clean and disinfected	
		Window and light fixtures are cleaned and operating properly	
		Draperies and blinds are clean and dust free	
		Garbage cans clean and emptied daily	
		Plants exhibit no evidence of insect infestation and surfaces under plants are clean	
		No evidence of mould, mildew or other bio-contamination	
		No evidence of insects, rodents or other pests	
		Self-contained heating and cooling units are clean, free of bio-contamination and operating correctly	

NOTES:

SPECIAL AREAS (e.g. SMOKING AREAS, POOLS, LABORATORIES)

Checked	Needs Attention		Comments
		Chemicals are stored properly and vented directly outdoors	
		Garbage cans cleaned and emptied daily	
		No evidence of mould, mildew or other bio-contamination	
		Dust levels minimal. Dusting performed with damp cloths or microfibre cloths	
		Carpeting and flooring are clean and in good condition	

FOOD PREPARATION AND EATING AREAS

Checked	Needs Attention		Comments
		Floors should be clean and free of debris or food scraps, or any signs of bio-contamination, and cleaned at least once daily	
		Floor drains are operating properly	
		Air vents are clean and operating properly	
		All surfaces that come in contact with food preparation are clean, free of food scraps and debris, and cleaned after every meal or use	
		Tables (tops and undersides) and chairs are cleaned and sanitized after every meal or use	
		Washing areas and appliances, cooking and eating utensils are cleaned after every meal or use	
		Garbage cans clean and emptied daily	
		No evidence of insects, rodents or bio-contamination	

NOTES:

WASHROOMS, RESTROOMS, SHOWER AND BATH AREAS

Checked	Needs Attention		Comments
		Floors, countertops, basins and toilets are disinfected/sanitized daily	
		Floor drains are operating properly	
		No evidence of mould, mildew or other bio-contamination	
		Shower heads, water faucets and toilets are operating properly	
		Soap dispensers are operating properly	
		Vents are clean and operating properly with enough ventilation to keep areas dry	
		Garbage cans clean and emptied daily	

MAIL, COPY AND COMPUTER ROOMS

Checked	Needs Attention		Comments
		Equipment is free of dust and debris	
		Floors should be clean and free of debris	
		Air vents clean and operating correctly	
		Garbage cans clean and emptied daily	
		Telephones, doorknobs and light switches are clean and disinfected	

CUSTODIAL CLOSETS AND STORAGE AREAS

Checked	Needs Attention		Comments
		Area is clean and products are neatly organized	
		Equipment is cleaned after every use and checked prior to storing	
		Vacuums fitted with HEPA (High Efficiency Particulate Air) or appropriate filters	
		Mops in good condition	
		Observe cleaning and stored chemicals for DOT (Department of Transportation) hazard placards. If hazardous products are stored, further review is necessary	
		Floors should be clean and free of debris	
		Drains and washbasins operating correctly	
		Exhaust fans/vents are working correctly	

MECHANICAL, ATTICS, UPPER AREAS AND ROOFS

Checked	Needs Attention		Comments
		No evidence of water leaks or standing water of roof	
		Dust levels and debris are minimal	
		No evidence of birds, rodents, insects or bio-contamination	
		Screens and barriers are in place to prevent pest entry	
		Outdoor air intakes are clean and away from sources of contamination (vehicle exhaust, smoke stacks, etc.)	
		Air handlers and related equipment are routinely inspected and cleaned; filters are periodically cleaned and replaced	
		Mechanical rooms and air plenums not used for storage	

NOTES:

APPENDIX K

Appendix K: The Green Clean Standard Operating Procedures (SOP) Manual

A Green Clean Standard Operating Procedures (SOP) Manual is meant to be a tool for implementing and managing the program, much like a business plan helps manage a school board.

The major sections of a Green Clean SOP Manual are outlined below:

Statement of commitment

The administrator clearly articulates its understanding of the school board's green clean policy and its commitment to the policy.

Green clean program overview

A "executive review" of the school board's green clean program, indicating the scope of the program and why the school board is implementing it.

Cleaning chemical procedures

A discussion of ***how*** the cleaning chemicals to be used as part of the green clean program were chosen. It should be clear to whoever reads or uses this manual, the criteria that were considered as part of the selection process.

List of approved chemicals

A list of the products that are available for use throughout the school board. Note: Not all of these chemicals will be used in every school.

Product specification sheets

Manufacturers provide "cut sheets" or specification sheets for each product. Include these sheets in each school's SOP manual to help understand what chemicals and products are being used. The Ontario Occupational Health and Safety Act check this is the correct name of legislation requires an employer to have copies of MSDS) and Workplace Hazardous Material Information System (WHMIS) documents readily available to workers, to the joint committee or to the health and safety representative[4].

Cleaning equipment selection procedures

Outlines the decision-making process employed in choosing power cleaning equipment. There are few independent standard-setting organizations for power cleaning equipment. In North America, the Carpet and Rug Institute (CRI) evaluates vacuum cleaners and carpet cleaning systems. As with chemical standards, these provide a good starting point for considerations in evaluating and choosing power cleaning equipment.

List of approved equipment

List of equipment that is approved for purchases under the school board's equipment policy.

Equipment specification sheets

Provide the specification sheets for all equipment approved for use in the school board. The cleaning industry may appear to be fairly static; however, there are innovations and changes to power equipment on a regular basis, and these should be regularly reflected in the equipment specification sheets.

[4] Ontario Ministry of Labour: A Guide to the Occupational Health and Safety Act. http://www.labour.gov.on.ca/english/hs/ohsaguide/index.html

Custodial paper and plastic liner selection procedures

Sets out the guidelines for the purchase of paper and plastic liners. Considerations may include the amount of recycled content (especially post-consumer recycled content), paper that has been made in a chlorine-free process, or paper created from non-traditional resources, such as bamboo or various grasses.

List of recommended paper products and plastic liner specifications

List of recommended paper products that are authorized for use in any school implementing a green clean program.

Specification sheets indicate the key parameters for procurement staff involved in making a choice. Paper manufacturers are experimenting with new materials and processes to protect our natural resources. Having the detailed information about the current products readily available makes comparison with new products easier.

Other tools selection procedure

Describes the procedures used to choose all other tools not already discussed. This is a management tool to assist individuals involved in evaluating, choosing or purchasing chemicals, equipment, paper or other supplies.

Selection criteria for green custodial supplies

Outlines the key criteria in selecting custodial supplies. Typically the criteria includes:

- Efficiency
- Performance
- Price
- Availability
- Appropriate green certification

Additional criteria may include:

- Health impacts
- Odours
- Recyclable content
- Raw materials – extraction
- Process of manufacturing, packaging and transportation
- Longevity
- Impacts of disposal

List of recommended supplies

List of the approved green clean custodial supplies available for use throughout the school board.

Supply specification sheets

Specifications sheets, including MSDS, WHMIS and any other materials for each cleaning product.

Green clean program guiding principles

Articulates the guiding principles of the school board's green clean program, including specific approaches and general guidelines for developing new procedures.

Cleaning staff training guidelines

Set uniform expectations regarding the development and standard of training programs for custodial staff across all schools.

Vulnerable populations guidelines

Documents guidelines for staff to identify, understand and respond to the needs of vulnerable populations within each school.

Communication guidelines

An overview of the school board's expectations for schools, adopting a green clean program to develop a communication strategy for their internal and external stakeholders.

In practice, many school boards have already developed standard operating procedures. School boards are encouraged to review their existing operating procedures and identify opportunities to develop new procedures that will support the implementation of the green clean program.

APPENDIX L

Appendix L: The Green Clean Working Group

- Bob Mahoney, Plant Operations Controller, DSB Niagara
- Donna Lee Reid, Manager, Purchasing, Dufferin-Peel Catholic District School Board
- Jim Scott, Assistant Comptroller, Administrative Services, Toronto District School Board
- John Neville, Manager, Facility Operations, Thames Valley DSB
- Lee-Ann Evans-West, CUPE Representative
- Paul O'Donnell, CUPE Representative
- Steve Mills, Manager of Purchasing Services, York Catholic DSB
- Tom Mustapic, Associate Director and Superintendent of Business & Corporate Services, Thunder Bay Catholic DSB
- Cheri Hayward, Director, School Business Support Branch, Ministry of Education
- John Donofrio, Education Officer, Labour Relations Branch, Ministry of Education
- Karen Carter, Senior Policy Advisor, School Business Support Branch, Ministry of Education

APPENDIX M

Appendix M: School Boards That Shared Best Practices and Lessons Learned

- Grand Erie DSB
- Halton DSB
- Kawartha Pine Ridge DSB
- Ottawa-Carleton DSB
- Simcoe Muskoka Catholic DSB
- Thames Valley DSB
- Thunder Bay Catholic DSB

APPENDIX N

Appendix N: Green Clean Program Resource Guide Pilot: Participating School Boards

- **Halton Catholic DSB**
  - Assumption Catholic Secondary School
  - St. John Catholic School (Burlington)
  - St. Anthony of Padua Catholic School
  - St. Michael Catholic School
- **Hamilton Wentworth DSB**
  - Glendale Secondary School
  - Glenbrae Elementary School
  - Lake Avenue Elementary School
  - Bellmoore Elementary School
- **Hastings and Prince Edward County DSB**
  - V.P. Carswell Elementary School
  - Queen Victoria Elementary School
  - Harmony Public School
  - Moria Secondary School
- **Durham Catholic DSB**
  - Immaculate Conception Catholic School
  - Monsignor John Pereyma Catholic Secondary School
  - St. Monica Catholic School
  - St. Paul's Catholic School