



# INTEGRATED PEST MANAGEMENT PLAN

## TABLE OF CONTENTS:

<i>Topic</i>	<i>Page</i>
Introduction	2
Key Terms	3
Administration of the IPM Program	4
<ul style="list-style-type: none"><li>• MDARD Regulations</li><li>• IPM Communication</li><li>• Applicator Credentials</li><li>• Pesticide Applications &amp; PPE</li><li>• Pesticide Application Records</li><li>• Advance Notice of Pesticide Use</li><li>• Program Evaluation</li><li>• Posting</li></ul>	
Pest Management Strategy and Pest Biology	7
<ul style="list-style-type: none"><li>• Strategy</li><li>• Impact on Human Health &amp; Environment</li><li>• Control Methods</li><li>• Site Evaluations and Monitoring</li></ul>	
Responsible Parties	14

**INTRODUCTION**

Integrated Pest Management (IPM) is a pest management system that utilizes all suitable techniques to prevent pests from reaching unacceptable levels or to reduce an existing population to an acceptable level. An emphasis is placed on manipulation of the pest environment to the point that it will not support a pest population.

**ONLY QUALIFIED INDIVIDUALS MAY APPLY PESTICIDES ON HOPE’S CAMPUS.**

***PLEASE READ THIS MANUAL CAREFULLY AND FOLLOW APPROPRIATE PROCEDURES BEFORE MAKING ANY PESTICIDE APPLICATIONS AT THIS FACILITY.***

Be advised that violations of Michigan’s pesticide use laws are misdemeanor offenses and are punishable by administrative fines of up to \$1,000 per count, or, upon a conviction in a court of law, may be punishable by fines of up to \$5,000 per count and/or imprisonment. Be advised that the Michigan Department of Agriculture and Rural Development (MDARD) is the enforcing agency for pesticide use requirements and MDARD may conduct routine unannounced inspections to verify compliance with IPM requirements.

This IPM program is intended to help reduce the incidence of pest infestation and to reduce the need for chemical pesticide applications at all campus buildings.

**ACRONYMS USED IN THIS PROGRAM INCLUDE:**

<b>IPM</b>	<b>INTEGRATED PEST MANAGEMENT</b>
<b>EPA</b>	<b>ENVIRONMENTAL PROTECTION AGENCY</b>
<b>MDARD</b>	<b>MICHIGAN DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT</b>
<b>PA</b>	<b>PUBLIC ACT</b>

## KEY TERMS

**Certified Applicator:** A person authorized to use and supervise the use of a restricted use pesticide. You must receive a passing score on one or more certification exams administered by MDARD to become a certified applicator.

**Commercial Applicator:** A person who is not a private agricultural applicator (i.e., a farmer, or someone growing a crop for an agricultural purpose) and who meets one of the following conditions:

- a) who is required to be a registered technician or certified applicator under this part (see note below).
- b) who uses or supervises the use of restricted use pesticides.
- c) who holds themselves out to the public as being in the business of applying pesticides.

**Note:** PA 451, section 8314 requires a person to be a certified applicator to apply any pesticide (other than a sanitizer, disinfectant, bactericide or general-use ready-to-use product), other than for a private agricultural purpose, in the course of their employment.

**Commercial Building:** Any portion of a building that is not a private residence where business is located and that is frequented by the public.

**Concentration:** The volume of pesticide formulation and the volume of carrier used to create an end use dilution.

**General Use Pesticide:** A pesticide that may be purchased by an individual who is not required to be a certified applicator.

**Integrated Pest Management:** A pest management approach that uses all suitable techniques in a total management system to prevent pests from reaching unacceptable levels or to reduce existing populations to acceptable levels.

**Least Toxic:** Least toxic chemicals are defined as pesticides that are compliant with the San Francisco Tier III hazard criteria (least hazard according to the San Francisco Hazard Review Process). The formulated product has a CAUTION or no signal word on the label because of low acute toxicity and/or has no warnings about toxicity to fish or other aquatic life, birds, wildlife, or honey bees. For the known ingredients in the product, no hazard criteria are flagged for Tier 1 or Tier 2. Current hazard tier rankings for pesticides are located at <http://pesticideresearch.com/site/pestsmart>.

**Note:** Least toxic also applies to any pesticide product, other than rodent bait, that is applied in self-contained, enclosed bait station placed in an inaccessible location.

**Pest:** An insect, rodent, nematode, fungus, weed, or other form of terrestrial or aquatic plant or animal life or virus, bacteria, or other microorganism, or any other organism that the director of the MDARD declares to be a pest under PA 451, Part 83, Section 8322, except viruses, fungi, bacteria, nematodes or other microorganisms in or on living animals.

**Pesticide:** A substance or mixture of substances intended for preventing, destroying, repelling, or mitigating pests or intended for use as a plant regulator, defoliant, or desiccant. Note that products such as Weed-and-Feed, RoundUp, or Raid are pesticides.

**Ready-To-Use Pesticide:** A pesticide which is applied directly from its original container consistent with label directions, such as an aerosol insecticide or rodent bait box, which does not require mixing or loading prior to application. Granular weed-and-feed

products applied using rotary or drop spreaders are NOT considered to be ready-to-use and for nearly all situations an applicator applying the product as part of their non-agricultural work duties must be certified to use it.

Registered Applicator: A classification of applicators authorized to apply general use pesticides for a commercial or private purpose as a scheduled and required work assignment.

Threshold Level: The level of pest numbers or pest infestation that can be tolerated.

## ADMINISTRATION

### REGULATIONS

Laws concerning pesticide use in schools, day care centers, public buildings, and medical care facilities can be found in:

Public Act 451 of 1994, Part 83, Pesticide Control

Regulation 636, Pesticide Applicators

Regulation 637, Pesticide Use

These laws can be downloaded from the Michigan Department of Agriculture and Rural Development (MDARD) web site located at [www.michigan.gov/mdard](http://www.michigan.gov/mdard). Type the appropriate Act or Regulation into the search engine and follow the links to get a copy, or you may contact MDARD at 800-292-3939.

### COMMUNICATION – SIGHTING LOG

Proper implementation of an Integrated Pest Management (IPM) program requires careful administration. It is important for the building manager and administrative staff to communicate with the pesticide applicator(s) to ensure full implementation of the IPM program. To meet this goal, accurate recordkeeping data will be used as part of the communication process. The building manager will ensure that pest sightings are recorded in the Physical Plant work order system.

### APPLICATOR CREDENTIALS

Outside contractors who conduct pesticide applications on campus, other than use of a sanitizer, germicide, disinfectant or antimicrobial agent, must be **licensed** and **certified**.

Persons who are employees of the College who have obtained training may use a *general-use ready-to-use product* (see definitions section) in compliance with State of Michigan regulations without being certified or registered. However, whenever possible, pesticide applications should be conducted by the person responsible for pest control in this facility or by a licensed and certified professional applicator.

Persons who use a pesticide product at this facility which is NOT ready-to-use, other than a sanitizer, germicide, disinfectant, or antimicrobial agent, **must** be a commercially certified or registered pesticide applicator. Examples of situations where the applicator must be commercially certified or registered include:

- When pesticides are mixed and applied from a compressed air sprayer such as a hand-can or backpack sprayer.
- When pesticides such as weed-and-feed are put into a granular spreader, such as a lawn weed-and-feed spreader, for application.

---

## PESTICIDE APPLICATIONS AND PERSONAL PROTECTIVE EQUIPMENT

Pesticide applications for non-emergency situations shall only be conducted by an applicator who has completed their IPM training and shall be made in accordance with this IPM program. Applications must be made in a manner that is consistent with the pesticide label directions, as required by State and Federal law. The applicator shall use personal protective equipment that is appropriate relative to the potential exposure and as required by the pesticide label. Persons who apply pesticides at this facility, other than general-use ready-to-use pesticides are commercial pesticide applicators. Minimum personal protective equipment for commercial pesticide applicators includes long pants, protective footwear, gloves that are impervious to the pesticide being applied (when contact with the hands is likely), and long-sleeve clothing. Short-sleeve clothing may be worn if soap and water is immediately available and a long-sleeved shirt is not required by the pesticide label.

---

## PESTICIDE APPLICATION RECORDS

Records will be maintained within the Physical Plant work order system or by the licensed and certified professional pesticide applicator. Records shall contain at least the following information:

- Site address and the location of the areas or room(s) where pesticides are applied.
- The date of service.
- The target pest(s).
- If pests are found:
  - An inspection report and the conditions conducive to pest infestation.
  - Pest management recommendations made by the applicator, such as structural or habitat modification.
  - Structural or habitat modifications or other measures initiated as a part of the IPM program.
  - The brand name, EPA registration number, concentration and total amount of pesticide(s) used.
- The name of the applicator.
- The method and rate of application.

---

## ADVANCE NOTICE OF PESTICIDE USE

Advance Notice of Pesticide Use must be delivered to the Physical Plant at least 72 hours prior to the anticipated treatment. The notice may be sent via email or posted at a public location in the building.

The Notice shall contain the following information:

- A statement that a pesticide is expected to be applied.
- The target pest(s).
- The approximate location of the application.
- The date of the application

In the event of the need for emergency applications, notice must be made to the Physical Plant within 24 hours of application. This does not include use of least toxic pesticides. An emergency is defined by any infestation that is currently or will soon result in building damage or is an immediate health concern to building occupants.

The Physical Plant will notify occupants, if needed.

## IPM PROGRAM EVALUATION

The IPM program shall be evaluated on a continual basis to determine the program's effectiveness and the need for program modification. The IPM program should contain a continual record of inspections and pesticide applications. These documents can be evaluated to determine the success of the IPM program. If the evaluation does not indicate improvement or continuation of an acceptable pest level, then the IPM program should be revised to reach an acceptable level of pest control.

## POSTING

When making an application of pesticides, *other than a general-use ready-to-use pesticide that are defined as least toxic*, a commercial applicator shall place the appropriate signs or markers at the primary point or points of entry.

### Indoor Insecticide Applications

The primary point or points of entry must be posted with the appropriate signs. Postings shall remain for at least 48 hours after the most recent application of insecticide. Posting signs must be in compliance with Regulation 637, Rule 11(4). Signs shall be at least 2 ½ inches square and shall depict a house surrounded by a cloud. The date shall be placed on the sign. See the rule for additional details on sign requirements. Please note that treatments using a general-use ready-to-use product that are defined as least toxic are exempt from the posting requirement. The posting should be similar to the item depicted in illustration #1 or #2 below.

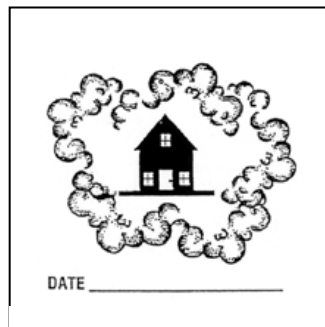
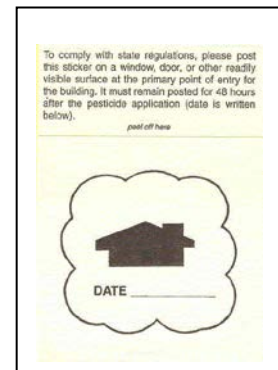


Illustration #1



### Ornamental or Turf Applications

The primary point or points of entry must be posted. Postings shall remain at least 24 hours. Postings will be in compliance with Regulation 637, Rule 11(2). Signs shall be at least 4" high by 5" wide and shall depict a picture of an adult and child walking a dog on a leash. The illustration shall depict, using a diagonal line across the circle, that this action is prohibited. See the rule for additional details on sign requirements. The sign must be in compliance with the requirements of Regulation 637, Rule 11(2). It will look similar to the sign shown below, with the sign having the same information on both sides of the sign.



## PEST MANAGEMENT STRATEGY AND PEST BIOLOGY

### STRATEGY

This IPM program involves the use of available methods or strategies to control pests including inspection, sanitation, exclusion, reservoir reduction, harborage reduction and population reduction.

1. Inspections and pest population monitoring refers to a regularly scheduled program of building and site inspections limit the need for emergency pesticide applications.
2. Sanitation refers to a reduction of the food and water resources that are attractive to pests. By minimizing the resource of food and water available to the pests, we can greatly reduce the number of pests without the application of pesticides.
3. Exclusion refers to the use of caulk, mortar, screens or similar materials that can reduce or eliminate the entry of pests into the building.
4. Reservoir reduction refers to techniques such as removing a pest attraction feature, such as moving a dumpster a distance away from the building so that pests attracted to the dumpster are not brought close to the building.
5. Harborage reduction refers to elimination of habitat that provides a home (or harborage) to pests. For example, cleaning old equipment from a storage room will reduce harborage for mice. Mowing grass around a building will reduce the cover and harborage for pests.
6. Population reduction refers to means of control such as mechanical traps or use of repellents to drive away pests.



---

## IMPACT ON HUMAN HEALTH & ENVIRONMENT

Methods used for pest control will have the lowest possible impact on human health and the environment. The pest control method will consider the effectiveness of the treatment for pest reduction while striving for the lowest level of adverse impacts on human health and the environment. Use of least toxic chemical pesticides (see definition on page 3), minimum use of chemicals, use only in targeted locations and use only for target species shall be standard practice at all buildings.

Any cleaning products used for IPM must meet the requirements of LEED® for Existing Buildings: Operations and Maintenance™ IEQ Credit 3.3: Green Cleaning, Purchase of Sustainable Cleaning Products and Materials.

### Insect Control:

Should an area need treatment to combat current or imminent insect infestation, a least toxic, target-specific pesticide bait shall be the primary crack and crevice treatment of choice. Should the Technician find the use of such materials would likely be ineffective against that target pest or a poor choice due to environmental conditions or the availability of a bait listed to that target, a residual or non-residual contact insecticide chemical may be utilized. Technicians shall utilize Integrated Pest Management processes to determine which method of treatment shall be the most effective against the target pest with minimum negative effect on the facility's working environment as well as the global environment. Should a residual material be needed to control activity for longer periods of time or under emergency circumstances to gain control of a large or dangerous infestation, use shall be limited to only those areas that require such treatment and only in minimum volumes necessary to accomplish control of the target species.

Exterior applications of insecticide may be necessary during warmer months to prevent or correct a variety of infestations. Such applications may be crack and crevice or spot applications. Seasonal treatments will be done on an as-needed basis utilizing minimum volumes and in such a manner that will eliminate excessive drift of material.

All insecticides used are to be registered with the Environmental Protection Agency and shall be used in accordance with label guidelines for facilities such as Hope College. No insecticide containers shall be stored or discarded anywhere on the Hope College's property and shall be appropriately disposed of by the contractor.

### Rodent and Nuisance Animal Control:

Control measures will generally consist of nontoxic trap stations depending on location and situation. Nuisance animal control will generally consist of humane live-trapping and removal.

The policy regarding bats in housing units is written and updated by the Campus Health & Safety Officer.

Products:

Chemical pesticides are considered a last resort under the tenets of integrated pest management. Pesticides are to be used after non-chemical options have been exhausted, with a preference for use of a Tier 3 pesticide where a Tier 3 pesticide was determined by hazard screening to be of “lowest concern,” because the product contains

- no known, likely, or probable carcinogens
- no reproductive toxicants (CA Prop 65 list)
- no ingredients listed by the EPA as known, probable, or suspect endocrine disrupters
- active ingredients has soil half-life of thirty days or less
- and is labeled as not toxic to fish, birds, bees, wildlife, or domestic animals

Non-rodent pesticides are also considered least toxic if they exceed the Tier 3 criteria but are used in self-contained baits and placed in inaccessible locations. Rodent baits are not considered least toxic under any circumstances.

Tier 3 products approved for use are:

Product Name	Active Ingredient
Advion Ant Bait indoor use	Indoxacarb 0.05%
Advion Roach Bait indoor use	Indoxacarb 0.06%
Gentrol	Hydropene 90.6%
Cimexa	Silicon Dioxide as Amorphous Silica 92.1%

Tier 2 products are of “moderate concern” and to be used under emergency conditions (as defined above) or in the event that both preventative methods and least-toxic pesticides prove to be ineffective at pest control.

Tier 2 products approved for use under the conditions outlined above are:

Product Name	Active Ingredient
Maxforce FC Magnum	Fipronil 0.05%
Terad 3	Cholecalciferol 0.075%

Tier 1 products are not intended for use except when there is a concern for public safety and in situations where the use of a Tier 2 product is inadequate or unsafe.

## CONTROL METHODS

All users of controlled chemicals on campus are to be credentialed pest control providers and utilize best practices for chemical storage, preparation, handling, and disposal.

<b>CHEMICAL APPLICATION PRACTICES</b>	
<b>User Qualifications</b>	<ul style="list-style-type: none"> <li>▪ All chemical application and advice on pest-management problems will be made by a licensed pest control company, particularly in the creation of customized integrated pest management problems, which may require detailed knowledge of the biology and ecology of a particular species.</li> <li>▪ If pesticides are required, the technician will determine the best product and application in accordance with approval requirements.</li> <li>▪ A specialist must prepare and use all chemicals.</li> </ul>
<b>Species Considerations</b>	<ul style="list-style-type: none"> <li>▪ Time the treatment to coincide with the presence of the pest.</li> <li>▪ Use a selective chemical that has the least effect on non-target species and treat only the area affected.</li> </ul>
<b>User Safety</b>	<ul style="list-style-type: none"> <li>▪ Users must wear protective clothing appropriate to the pest chemical application used.</li> <li>▪ Ensure that the work area is well-ventilated.</li> <li>▪ Wear a respirator for outdoor spraying or dusting of organic phosphorus compounds</li> <li>▪ Eating, drinking and smoking must be prohibited when using or handling chemicals</li> <li>▪ Users must be familiar with the effects on the body of the chemicals they are likely to be using, and how the chemicals may enter the body.</li> <li>▪ Users must be aware of the signs and symptoms of acute poisoning related to chemicals they are using. They must stop work if they are feeling ill and seek medical advice.</li> </ul>
<b>Equipment</b>	<ul style="list-style-type: none"> <li>▪ Equipment must be frequently checked and properly maintained, both for health and safety reasons and to minimize spray drift.</li> </ul>

<b>Weather/Time Restrictions</b>	<ul style="list-style-type: none"> <li>▪ For outdoor use, spraying must not be carried out in unsuitable weather. Anyone operating sprayers must have access to a wind-speed meter and only spray when the wind speed is negligible.</li> <li>▪ Hours of work must be controlled so that building occupants are not exposed.</li> </ul>
----------------------------------	---

The method used for pest control shall take into consideration the relationship between pest biology and pest management methods, giving due consideration to the impact on human health and the environment. When chemical controls are necessary, this program will attempt to use products that are least toxic to human health and the environment, while remaining effective in control of the target pest(s).

<b>BASIC PLANT AND FUNGI CONTROL PRACTICES</b>	
<b>Maintenance</b>	<ul style="list-style-type: none"> <li>▪ Keep the building grounds well-maintained at all times. Clear up plant debris, especially from fruit-bearing trees,</li> <li>▪ Maintenance personnel shall use mulch and other landscaping best practices, warding off weeds and other pests.</li> <li>▪ Keep vegetation trimmed at least 18 inches from the building.</li> </ul>
<b>Plantings</b>	<ul style="list-style-type: none"> <li>▪ Maintain and plan landscape features to eliminate safe havens for pests.</li> <li>▪ Avoid monocultures by mixing plant species in planters and gardens.</li> </ul>
<b>Manual Controls</b>	<ul style="list-style-type: none"> <li>▪ Landscaping shall be hand weeded and chemical control shall be kept to a minimum. This measure prevents human and environmental exposure to hazardous chemicals.</li> </ul>
<b>Chemical Controls</b>	<ul style="list-style-type: none"> <li>▪ When chemical use is necessary, replace hazardous substances with least-toxic chemicals as defined by the San Francisco Hazard Review Process.</li> </ul>
<b>Inspection Schedule and Location</b>	<ul style="list-style-type: none"> <li>▪ Responsible parties will inspect the site at regular intervals to monitor and apply pest controls operations.</li> </ul>

<b>BASIC ANIMAL PEST CONTROL PRACTICES</b>	
<b>Site/Building Cleanliness</b>	<ul style="list-style-type: none"> <li>▪ Keep garbage containers clean, free of odors and covered at all times. Sanitation measures reduce habitat and food sources for pests.</li> <li>▪ Keep areas around garbage containers free of spillage or garbage to prevent the collection of trash or debris on the ground around or underneath the containers.</li> <li>▪ Keep grounds free of high weeds, trash, old equipment and debris, as these conditions create ideal harborage for rodents.</li> </ul>

<b>Structural Integrity</b>	<ul style="list-style-type: none"> <li>▪ Maintain the building exterior in good repair with no holes or openings larger than ¼ inch including, but is not limited to, windows, doors, fans, vents, etc., to keep pests from entering the building.</li> <li>▪ Address any deficiencies in the building exterior with corrective measures, i.e., cementing, screening, caulking, installing stripping on door bases, etc.</li> <li>▪ Maintain door sweeps on all applicable doors to produce a good seal to the ground.</li> </ul>
<b>Inspection Schedule</b>	<ul style="list-style-type: none"> <li>▪ Visual inspections shall be performed on a monthly basis to identify problem areas.</li> </ul>

## SITE EVALUATIONS AND MONITORING

Each building where pesticides are applied will be identified by name and address and provide a short description of the use of the building and any known pest problems. Monitoring will be done by building managers and any sightings will be reported via the Physical Plant work order system.

### *Kitchens, Break Rooms, Cafeteria, Home Education Room*

Visual inspection with a particular emphasis on cockroach and rodent infestations. Look for droppings, gnawing, harborage or insanitary conditions. Monitoring devices such as glue boards may be used. Recommended to monitor on a weekly basis during periods when school is in session and bi-weekly during periods when not in session.

### *Boiler Room, Maintenance Areas*

Visual inspection. Monitor for rodents and insects with glue boards or traps.

### *Bathrooms, Locker Rooms, Store Rooms and Closets*

Visual inspection. Bathrooms and locker rooms may be attractive to roaches. Look for droppings and/or egg cases. Monitoring devices such as glue boards may be used. Recommended to monitor on a weekly basis during periods when school is in session and bi-weekly during periods when not in session.

### *Classrooms and Hallway*

Visual inspection. Recommended to monitor on a weekly basis during periods when school is in session and bi-weekly during periods when not in session.

### *Exterior Areas*

Monitor periodically. Look for entry points into the building. Look for areas that can serve as a reservoir for pests such as weedy areas or accumulations of debris.

**RESPONSIBLE PARTIES**

The Physical Plant is responsible for the monitoring consistent and correct implementation of the IPM Plan. This department and Shoreline Services, Inc. are responsible for record keeping and performance measurement. The compiled records from all parties will be synthesized by as part of an annual IPM review.

<b>Title</b>	<b>Contact</b>	<b>Phone</b>	<b>Area of Responsibility</b>
Physical Plant Director	Kara Slater	616-395-7835	Coordinator
Pest Management Company	Jefrey Budd	616-394-9100	Pesticide Applicator
Hope Grounds	Bob Hunt	616-395-7828	Pest Identification



# GREEN CLEANING POLICY

**Intent:** To reduce the exposure of building occupants and maintenance personnel to potentially hazardous chemical, biological, and particulate contaminants, which adversely affect air quality, human health, building finishes, building systems and the environment.

## SCOPE

It is our intent to engage in a green cleaning program that includes the following minimum sustainable green cleaning protocols:

- To provide appropriate staffing to support the plan.
- To develop requirements for training of maintenance personnel in the hazards of use, disposal, and recycling of cleaning chemicals, dispensing equipment, and packaging.
- To create guidelines for use of chemical concentrates with appropriate dilutions systems to minimize chemical use.
- To implement the purchase and use of sustainable cleaning materials, products, equipment, janitorial paper products & trash bags, cleaning tools and wipes.
- To establish guidelines for purchase of products and equipment for sustainable cleaning and hard floor and carpet care products.
- For the purchase of sustainable cleaning equipment.
- To establish a high performance cleaning program, policies and plans for effective cleaning, maintenance and material storage.
- Promote good hand hygiene.
- Auditing of the appearance and cleanliness of all areas are conducted on a semi-annual basis using the APPA Custodial Staffing Guideline Standards.
- To provide for collecting occupant feedback and continuous improvement to evaluate new technologies, procedures, and processes.

## GOALS AND OBJECTIVES

We recognize that green cleaning is a significant component of indoor air quality, and that the contribution of indoor air quality to employee productivity is significant. We are committed to devoting the time and resources to perform these functions at an exemplary level. It is our policy to ensure that our building operates in an

environmentally responsible manner and we demonstrate good environmental stewardship within our community.

This policy is also put in place to support and care for all vulnerable building occupants including but not limited to those with emphysema, allergies, asthma, COPD, or other respiratory problems, pregnant women, children, and the elderly.

Our goal is to perform each of these strategies at the highest level of our abilities and comprehension.

---

## PROCEDURES AND STRATEGIES

Our internal custodial staff will provide all cleaning, maintenance and purchasing services. We will provide sustainable cleaning products as detailed below and we will use cleaning equipment complying with the sustainability criterion. We will also provide a cleaning program that includes the appropriate products and practices used when considering at-risk occupants.

---

## STAFFING

The building will be evaluated using APPA standards to calculate staffing needs based on room types, flooring types and other factors. In addition, necessary janitorial staffing levels shall be determined in order to deliver sufficient cleaning for vulnerable building occupants and visitors.

---

## TRAINING

The custodial staff will have at a minimum of 4 hours of initial green cleaning training and the policies associated with this task. There will be at least a minimum of 2 hours refresher course on green cleaning and the policies associated each year.

This training will include:

- Proper use and maintenance of tools and equipment
- Proper floor care procedures and products
- Job site, bio-hazard and chemical safety
- Cleaning chemicals
- Proper removal and disposal of vacuum filters and bags to reduce airborne contaminants

---

## PURCHASING

At least 30% (by cost) of the total annual purchase of the following products will meet will be made using the sustainability criterion established in LEED for Existing Building Operations and Maintenance 2009, *IEQ Credit 3.3: Green Cleaning – Purchase of Sustainable Cleaning Products and Materials*:



- Cleaning materials & products
- Disposable janitorial paper products
- Trash bags

Cleaning equipment purchases will meet sustainability criterion established in LEED for Existing Building Operations and Maintenance 2009, *IEQ Credit 3.4: Green Cleaning – Sustainable Cleaning Equipment*.

Cleaning equipment will comply with the sustainability criterion. We will protect worker safety and improve productivity with mechanical equipment designed for ergonomics, low sound emissions, and reduced environmental emissions. Documentation of equipment purchases and maintenance will be maintained.

Cleaning equipment is maintained by our on-staff technician by regularly replacing components such as filters and brushes, physical inspections to evaluate wear and tear and replacement of equipment that can no longer operate in an efficient manner.

---

#### STANDARD OPERATION PROCEDURES:

- Effective General Cleaning:
  - Ensure that chemicals have a proper dwell time so that soil is thoroughly removed using the least amount of product.
  - All areas of the building are to be cleaned on a regular basis.
  - Use Green Seal Certified or low VOC chemicals and tools that capture dust particles and contain them. Disinfectants will only be used in required areas or on touch points to reduce the use.
  - Send out notifications when project work such as floor care or carpet care will be conducted.
  - Capture dust, dirt and other contaminants, rather than moving it around through the use of the proper tools: microfiber dusting tools, microfiber mops, vacuums, carpet cleaning equipment.
  - Use microfiber cloths and flat mops to reduce or eliminate the need for chemicals.
  - Promote safety and prevent cross-contamination by using color-coded tools to ensure that pollutants are not carried from one area (such as a restroom) to another.
  - All equipment to meet LEED for Existing Building Operations and Maintenance 2009, *IEQ Credit 3.4: Green Cleaning – Sustainable Cleaning Equipment*.
- Hard Floor Care:
  - Hard floor types include: wood floor, LVT, ceramic tile and polished concrete.
  - All areas are cleaned weekly with either an automatic scrubber or micro fiber mop and bucket with a peroxide-based neutral cleaner or clean water.

- Carpet Care
  - Ensure proper vacuuming, extraction, rinsing and drying. Carpets can be host for moisture problems and mold growth. Use Carpet & Rug Institute’s Green Label approved vacuums with sound level less than 70dBA.
  - Vacuuming of carpeted areas will be conducted on a daily basis.
  - Carpets are to be scrubbed and extracted on an as needed basis using equipment certified by the Carpet and Rug Institute’s “Seal of Approval” Testing Program for deep-cleaning extractors. Notification of this activity to be sent to all occupants prior to the work being done. Work to be done during off hours and semester breaks. This ensures that occupants with vulnerabilities are more protected.
- Entryways
  - Reducing particulate infiltration protects floor products, mechanical equipment, and reduces respiratory problems. Focus cleaning efforts at entrances to intercept particulates at the door. Most pollutants enter the building on people’s feet, so it is important to trap and remove dirt before it enters the building and to clean frequently the entrances and entry mats.
  - Entryway systems are to be vacuumed daily using a vacuum approved by the Carpet and Rug Institute’s Green Label with sound level less than 70dBA.
  - Entryway systems are cleaned and extracted as needed
  - Inspection of the entryway systems occurs during our semi-annual cleaning audits
  - Auditing of the appearance and cleanliness of the entryways are conducted on a semi-annual basis using the APPA Standards and our QA Inspection Form semi-annually by a Supervisor.

---

## HANDLING AND STORAGE OF CLEANING CHEMICALS

- **Handling of Cleaning Products:**
  - Minimize particles and chemicals in the air. Mechanically capturing dust and dirt, using coarse spray chemicals, and applying the cleaner to the cloth rather than spraying the surface to be cleaned, are all important aspects of this indoor air quality program.
  - Use environmentally preferable cleaning chemicals along with chemical management systems for accurate product dilution. Therefore, fewer and milder/low VOC chemicals can be used.
  - Focus on preventive measures and quick clean up of accidental spills.
  - Maintain SDS Sheets of all cleaning chemicals, and store in an accessible location. Hope College has an online system for SDS that is accessible by all employees.

- **Storage of Cleaning Products:**

- All cleaning products will be stored in the designated custodial closets. Every product has a home location that is labeled with the product number based on ergonomics and frequency of use. If cleaning products are found to be stored elsewhere, they will be moved to the correct storage area immediately.
- If cleaning products are found that do not comply with the green cleaning requirements in this document they are to be disposed of immediately in the proper manner.
- Non-compliant chemical products that have no reference standard may be used if approved for use by the Management Team.
- All Hope College employees are required to follow these guidelines.

---

## HAND HYGIENE

- Cleaning processes will focus on touch points like door handles and other objects or fixtures within the facility.
- Communication will be done with employees on the importance of good hand hygiene via periodic e-mail reminders, our Emergency Preparedness Plan, and inclusion of training at team meetings.
- Protective apparel is available for employees.

---

## ASSESSMENT

The building will be audited on a semi-annual basis in accordance with APPA Leadership in Educational Facilities “Custodial Staffing Guidelines” to evaluate the appearance level of the facility. Evaluations will be done by members of the campus custodial team and management.

The building must score at level 1 or 2. Buildings scoring higher will be evaluated by management to determine further action.

Occupant feedback is accepted through our Maintenance Connections Work-order system. Complaints on cleaning quality are submitted in through the Maintenance Connections Work Order System and reviewed by the Responsible Party. Individuals with specific complaints are responded to within 48 hours. Copies of all complaints will be kept on file, and reviewed annually by the management team to attempt to detect patterns.

---

## STANDARDS AND REFERENCES:

All products shall meet the Green Seal requirements where available. Not all product categories include GS-37 certified products and in that case, the safest available product available will be used.

- The cleaning supplies meet one or more of the following standards:

- Green Seal GS-37, for general-purpose, bathroom, glass and carpet cleaners used for industrial and institutional purposes
- Environmental Choice CCD-110 for Cleaning and Degreasing Compounds
- Environmental Choice CCD-146 for Hard surface Cleaners
- Environmental Choice CCD-148 for Carpet and Upholstery Care
- Disinfectants, metal polish, floor finishes, strippers, or other products:
  - Green Seal GS-40, for industrial and institutional floor care products
  - Environmental Choice CCD-112 for Digestion Additives for Cleaning and Odor Control
  - Environmental Choice CCD-113 for Drain or Grease Traps Additives
  - Environmental Choice CCD-115 for Odor Control Additives
  - Environmental Choice CCD-147 for Hard Floor Care Products
  - California Code of Regulations maximum allowable VOC levels for the specific product category (<http://www.arb.ca.gov/consprod/regs/cp.pdf>)
- Disposable janitorial paper products and trash bags:
  - US EPA Comprehensive Procurement Guidelines for Janitorial Paper and Plastic Trash Can Liners
  - Green Seal GS-09, for paper towels and napkins
  - Green Seal GS-01, for tissue paper
  - Environmental Choice CCD 082, for toilet tissue
  - Environmental Choice CCD-086, for hand towels
  - Janitorial paper products derived from rapidly renewable resources or made from tree free fibers
- Hand Soaps
  - No antimicrobial agents (other than as a preservative) except where required by health codes and other regulations.
- Cleaning cloths
  - Microfiber cloths shall be used to reduce dust and other harmful contaminants

## APPROVED PRODUCTS

Most products are shipped directly to the building. Some products will be shipped into our central receiving/warehouse and then pulled as needed from Central Supply.

### General Purpose, Bathroom, Glass & Carpet Cleaners

Description	Manufacturer	Meets Sustainability Criterion	Certification Information or Notes
Green Certified Multi-purpose Cleaner	Envirox	Yes	Green Seal GS-37
Green Certified Neutral Floor Cleaner	Envirox	Yes	Green Seal GS-37
Green Certified Hard Water/Soap Scum Remover	Envirox	Yes	EcoLogo (Environmental Choice) UL 2759
Green Certified H2O2 Orange Cleaner	Envirox	Yes	EcoLogo (Environmental Choice) UL 2759

### Paper, Skin Care and Trash Can Liners

Description	Manufacturer	Meets Sustainability Criterion	Certification Information or Notes
FMX Luxury Foam Hair & Body	GoJo	Yes	EcoLogo
FMX Green Certified Hand Soap	GoJo	Yes	EcoLogo
Trash Liners 43x48	Heritage	No	
Trash Liners 24x33	Heritage	No	

EcoSoft Toilet Paper Jumbo Roll	Wasau	Yes	Green Seal GS-01
EcoSoft Paper Towel multi-fold	Wasau	Yes	Green Seal GS-09

### Equipment

Description	Manufacturer	Meets Sustainability Criterion	Certification Information or Notes
Super Coach Pro 6 Backpack Vacuums	ProTeam	Yes	66dBA, CRI Approved
Swingo 455B floor scrubber	Taski	Yes	68dBA, Chemical metering, variable speed
Clipper carpet extractor	Windsor	Yes	CRI Approved
Versamatic Plus 14 Vacuum	Windsor	Yes	64.5dBA, CRI Approved

### PERFORMANCE METRIC

- Semi-annual APPA Custodial Effectiveness Assessment
- Occupant Feedback
- Sustainability Criterion Performance levels
- Documentation of custodial staff training
- Equipment maintenance Logs
- Floor and carpet maintenance Logs
- Approved product and equipment list

Responsible Party: Kara Slater, Director of Physical Plant