
Healthy Green Schools & Colleges



HEALTHY SCHOOLS
CAMPAIGN

September 21, 2021

Response to Comments, Revision of Proposed Standard for K-12 School Districts and Higher Education Institutions

This document contains the comments that were submitted during the 1st Public Commenting Period and includes Healthy Green Schools and Colleges' responses to these comments. The document that was published for comment, the Proposed Revisions, can be found at [WEB LINK].

The following individuals and organizations participated in the Public Comment Period and played a vital role in the revision of these standards. We thank these individuals and organizations for their assistance and involvement.

American Cleaning Institute
Arnold Sales
Busch Systems
Camfil USA
Clinical Technology, Inc.
Dion Lerman
Diversey
Eco Quality Solutions
Ecolab

GP PRO
Green Seal
Household & Commercial Products
Association
Matt Selbie
Sensibles
Waterless Co.
Tersano

Objectives of this Revision

The COVID-19 pandemic has made creating healthy school environments an urgent national priority and brought to light the serious under-investment in school facilities nationwide. However, even before the pandemic, nearly half of U.S. schools reported indoor air quality problems that put the health of students and staff at risk. Healthy Schools Campaign (HSC) and Green Seal have proposed the first national standard for healthy and sustainable school facilities at the district level, prioritizing measures that make a significant difference in indoor air quality

without major capital investments. The objectives of the revised version of the proposed standard for 2nd public comment include:

- Incorporating feedback from commentary received during the 1st public comment period
- Aligning the intent statements with the American Rescue Plan, drawing clearer distinctions under which regulation sections standard requirements may receive funding
- Weighting of the standard criteria against a 100-point scale
- Creating new requirements for equity monitoring, performance monitoring and a more substantial IAQ monitoring section
- Revising the requirements for sanitizing and disinfecting products, including modifications to the approved list of compliance options
- Modifying the approach to fragrances in relevant requirements across the standard
- Including additional/modified referenced standards from the 1st public comment version, such as Federal, State, Local, or Tribal requirements, World Health Organization, applicable CDC Guidance, and others
- Referencing a “performance period” that will help districts to calculate if they have reached the % of EPP thresholds in the purchasing requirements. (This will be further explained in the guidance manual)

Comments by Categories

Click the categories below to go to the relevant section of this document.

- [Comments where changes have been incorporated into the proposed standard](#)
- [Comments that will be addressed as part of implementation guidance/supplemental support materials development](#)
- [Comments that did not result in substantive changes to the proposed standard](#)
 - Requests for changes to Ice and Snow Melt Removal Requirements
 - Requests for specific product references
 - Requests for removal of reference to HEPA filters
 - Requests for additional allowable ingredients for disinfectants
 - Requests for water efficiency requirements
 - Requests for requirements addressing automated reporting for janitorial needs

Comments Where Changes Have Been Incorporated Into The Proposed Standard

Healthy Green Schools and Colleges appreciates the thoughtful feedback received from all commenters. The following individual points of feedback provided instructive commentary to guide changes to the proposed standard, as they provided additional clarity for the standard's target audience, helped to avoid conflict with related programs, regulations, etc. in the market, led to the inclusion of additional definitions and clarifications, and addressed necessary technical changes to meet the intent of the criteria and better ensure requirements create their desired impact. In some cases, a variety of comments on a similar topic (e.g., the requirements of the procurement of disinfectants) resulted in modifications that combined the sentiment of a variety of commenters and may not fully incorporate all aspects of each comment received on the topic.

General Comments

- **COMMENT:** The use of fragrances within products:
Throughout the standard, it is recommended to “avoid using products with fragrances whenever possible.” It is very challenging to use all fragrance-free products in the cleaning industry. Fragrances may be included in products to overcome the odor of the cleaner or to impart freshness to the space being cleaned. In addition, there is a growing use of essential oils in the market, which will continue to make this quite challenging for facilities to meet.
I suggest amending this statement to allow for safe use of fragrances within products. Example: “Select products that are fragrance-free or that comply with the International Fragrance Association’s (IFRA) safety standards.” IFRA is the global industry standard for safety assessments on fragrance ingredients and would give the facility managers additional guidance on how to select products with preferred fragrances in them if fragrance-free solutions are not available.
- **COMMENT:** As a general comment, there are parts of this draft standard that duplicate or may conflict with state and federal requirements. To limit confusion the beginning of the standard should remind users that they still must adhere to applicable federal and state requirements. For example, there is information in the standard that is redundant with OSHA, specifically 29 CFR 1910.1200.
- **COMMENT:** I recommend assessing parts of the standard against CDC and WHO guidelines for cleaning and disinfection, and aligning with agency guidelines. It can become very confusing for a facility manager to try to align their practices to both this standard and the CDC/WHO when the recommendations are at odds with other.
- **COMMENT:** Page 4
a points-based scoring system will encourage schools to keep improving at their own pace, with support from a network of facility management peers across the country who are on a similar journey
Should you provide a view on how the point system works?
- **COMMENT:** Vulnerable Populations - Please add to the definition, “(e.g., fragrances, pathogens, environmental soils)”
- **COMMENT:** Glossary Concentrate – HCPA recommends modifying this definition to read, “Concentrate. A product that must be substantially diluted with water to form the appropriate solution for use (a minimum of at least 1:4).” - **Note: the change**

incorporated in response to this comment aligned the definition of concentrate with Green Seal's standard definition of the term.

Training Section

- **COMMENT:** Comments on Section 2: Training
Given the amount of time spent on buses we believe it is appropriate to include transportation personnel as well as third-party contractors in this section.

Procurement Section

- **COMMENT:** With regard to "Receptacles and Dispensers", towel and tissue dispensers should absolutely be touch-free. Soap and sanitizer dispensers are not a link to cross contamination since the user washes or sanitizes their hands after activation of the dispenser. Soap and sanitizer dispensers cannot be touch-free without utilizing electronic motors and batteries. This not only presents opportunities for non-compliant hand hygiene occurrences when batteries or electronics fail, but also creates need for increased maintenance costs, and recycling (or waste). Towel and tissue dispensers do not require electronics nor batteries to be touch-free.
- **COMMENT:** Purchase products certified to Green Seal or a relevant program listed in the U.S. EPA's Recommendations of Specifications, Standards, and Ecolabels for Federal Purchasing
What percentage of facility purchases are needed to meet this standard and how is this monitored?
- **COMMENT:** Stand Alone Air Cleaners, p, 16 – similarly the ASHRAE recommendation, is use proven technologies, properly tested and sized.
- **COMMENT:** Environmentally Preferable Product - Can you please clarify what is meant by "market leadership"?
- **COMMENT:** For disinfectant and sanitizing products that are subject to the Federal Insecticide Fungicide Rodenticide Act (FIFRA), the label directions for use must be followed to comply with state and federal regulatory requirements.
- **COMMENT:** Disinfecting Products
HCPA recommends that the standard does not limit users to EPA's List N which was specifically developed in response to the COVID-19 pandemic. While List N is a useful resource for the pandemic, List N is a small subset of US EPA registered sanitizers and disinfectants that mitigate illness causing microorganisms beyond COVID. Given the holistic nature of this standard, it is important to include access to all US EPA registered sanitizer and disinfectant products that meet the criteria for this standard.
- **COMMENT:** Disinfecting Products - request to include aqueous ozone in the list of available options. Aqueous ozone generators are classified as pesticide devices and fall under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). Under this Act, the EPA requires that the manufacturer of such devices register their manufacturing facility with the EPA and perform efficacy tests. Tersano's manufacturing facility (reg # 89093-CAN-1).[...]

Because of the difficulty for testing laboratories to acquire the actual virus, testing against approved surrogates was approved by the EPA in 2016, as described in its "GUIDANCE

TO REGISTRANTS: PROCESS FOR MAKING CLAIMS AGAINST EMERGING VIRAL PATHOGENS NOT ON EPA-REGISTERED DISINFECTANT LABELS”. As a result, chemical-based disinfectants, as well as pesticide devices have been tested against a SARS-CoV-2 surrogate, rather than directly against the SARS-CoV-2 virus. In April 2020 Tersano announced that its Stabilized Aqueous Ozone (SAO) was tested against Coronavirus MHV-3 (Murine Hepatitis Virus), an approved surrogate for SARS-CoV-2. The test showed a 99.99% reduction at 1 minute. (Compare this to Lysol Disinfectant Spray that requires a 10 minute contact time to achieve a 99.9% reduction.) Results for SAO tests performed on additional pathogens are also included in the Pathogen Study Summary attached. Additional testing against the actual SARS-CoV-2 is expected in June. In 2000, the NSF, the leading, internationally recognized testing lab, also performed numerous, independent, EPA approved methods tests on aqueous ozone that further supports the fact that aqueous ozone is a highly effective sanitizer and disinfectant. The NSF Registration # is 152236. A summary of these test results is also attached.[...]

Most people are told that to be an EPA approved disinfectant, a product must be listed on EPA’s List (N) Disinfectants for Use Against SARS-CoV-2. Unfortunately, this is only true for chemical disinfectants. Aqueous ozone generators are considered pesticide devices by the EPA and follow a different path for approval. Tersano’s SAO Dispenser manufacturing facility is registered with the EPA and the Tersano Dispenser, a pesticide device, has efficacy tests, performed under approved EPA Test Methods, to support claims of 99.99% reduction @ 1 minute for the CoVid-19 virus. Tersano’s SAO Dispenser is regulated by the EPA and is an approved device under FIFRA. Efficacy claims have been validated by independent EPA approved laboratories.

Facility Operations and Maintenance Section

- **COMMENT:** My high level feedback is that the sections of the draft standards that address recycling and waste are one dimensional and define what most recycling professionals would likely be an underperforming program. My impression from a quick scan of the draft guide that is primarily focused on cleanliness and health, while sustainability / recycling performance are limited to somewhat antiquated practices that omit more current best practices.

As one example, behavioral research and emerging best practices call for much more detailed design criteria for waste receptacles to address chronic problems of low recycling participation and contamination, including: uniform color & branding standards to distinguish trash bins from recycling, use of restrictive openings to control what people place inside bins, use a few key words and images on signage.

- **COMMENT:** Material Handling and Storage
Recommend providing another option outside of strip tests conduct periodic strip tests (chemical test strips) “or other means” to ensure proper chemical ratio is produced.
- **COMMENT:** Back of House Procedures: for best practice, a closed loop dispensing system is BEST as defined in GS37
- **COMMENT:** Laboratory Cleaning – this section is still in development. This section should specify that PPE appropriate to the activities in the lab is required prior to entry.

Cleaning activities should focus on the floors and high touch points like door handles, avoiding benchtops so that the cleaner is not exposed to unknown chemicals or microbiology, and that they do not disturb ongoing experiments. It should be the responsibility of the owner of the lab bench to clean and disinfect the surface regularly in-between experiments.

- **COMMENT:** Foodservice, Dining Areas, and Breakrooms:
I appreciate the inclusion of a monitoring step in the foodservice area. However, the requirement of ATP as the specific tool to do the monitoring seems too limiting to one existing technology, without allowing for implementation of other options available today or future innovations in food safety. I suggest amending this statement to be more inclusive of the tools available today - “Implement a periodic monitoring process for food preparation surfaces. Examples: ATP swabs, supervisor survey, etc”
- **COMMENT:** Additionally, there is information in the standard, e.g., in the Food Service and Laundry sections, that could have the unintended consequence of being less stringent or contradicting federal requirements.
- **COMMENT:** Comments on Section 5: Facilities Operation and Maintenance
Cleaning by Hand
The last bullet of the section needs to be modified to state that products should be used according to label directions. HCPA recommends editing the bullet to read, “Follow the label directions when spray bottles are necessary for product application.” Consider that, in some cases, cloths can neutralize or bind with and hold specific ingredients in a product making the cleaning less efficacious leaving behind the naturally present allergens.
- **COMMENT:** Cleaning by Hand - “Clean and disinfect cloths”, “Clean and sanitize microfiber cloths” – CDC recommends laundering in the warmest water appropriate for the material and drying completely. The term “hygienically clean” could be used in place of “clean and disinfect/sanitize”. It may also be prudent to add the statement “Do not reuse dirty cloths in other areas to prevent cross contamination.”
- **COMMENT:** Back of House Procedures:
I appreciate the requirement to periodically check the dilution control system to ensure that concentrated products are being properly diluted. However, the requirement to check the dilution through test strips will be extremely challenging for a facility as very few types of products have commercially available test strips to check for dilution. I recommend allowing for alternate methods to check the dilution control systems – “Conduct periodic checks of the dilution control system to ensure the proper chemical ratio is produced through methods such as test strips, calibration of the dilution system, or other quantitative check.”
- **COMMENT:** Location Specific Cleaning Requirements
Recommend adding a “High-touch Surfaces” section to cover door handles, knobs, handrails and other high-touch areas. Included in this section could be the following, “Require tracking and logging daily high touch-point cleaning activities for verification.”
- **COMMENT:** Please identify wall mount or recessed trash receptacles, commonly found inside stalls of female-designated and all-gender restrooms, as those requiring disinfecting. These fixtures are overlooked yet are the most contaminated hot spot in a restroom*. The outsides are coated with microorganisms from toilet plumes, inside

surfaces are soiled with blood and body fluids (potential blood borne pathogens are present in menstrual blood and vaginal secretions).

- **COMMENT:** OSHA Blood borne Pathogens Standard expects that these receptacles be properly lined so that cleaning staff does not come in direct contact with the contents. Pull bathroom trash liners and disinfect trash receptacles, including stall menstrual waste receptacles, at least once a day. Clean and disinfect areas including stall menstrual waste receptacles where pathogens can collect and surfaces touched by hands daily, and more frequently in the event of high traffic volume or high occupancy levels

Building Maintenance and Repairs Section

- **COMMENT:** Change "Use MERV 13 filters or the highest rated filter the existing system will allow." to "Use air filters labeled as a minimum of MERV-13A when tested in accordance to ASHRAE 52.2 with Appendix J or the highest MERV-A value filter the existing system will allow."
- **COMMENT:** The US GBC standard does not contain sufficient information to design or administer an Integrated Pest Management (IPM) program. Please reference additional technical resources, such as the IPM for Pennsylvania Schools and Childcares: A How-To Manual; the Manual is available for purchase from <https://extension.psu.edu/ipm-for-pennsylvania-schools-a-how-to-manual>; a free PDF may be downloaded from here with free registration. To help schools comply with IPM requirements or regulations, the Pennsylvania IPM Program, a program of Penn State's Department of Entomology, has recently published a new edition of the IPM for Pennsylvania Schools and Childcares: A How-To Manual. Fully revised, including a new chapter on bed bugs, it covers the health effects of pests, the regulations, policy development and implementation, and comprehensive information on pests, from A (ants) to Y (yellow jackets). Landscape pests on school grounds are also covered, including turf management.
The Standard also does not acknowledge the critical role school staff have in IPM: IPM cannot simply be contracted out to a vendor. IPM is a constant cycle of inspection, maintenance and reporting that involves not just custodial and maintenance staff, but also food service, athletics staff, school nurse, administration, and in fact, all building occupants.

Monitoring and Evaluation Section

- **COMMENT:** Please consider testing air quality in classrooms, common areas, and dorms and then making necessary changes to ventilation or adding air purifiers. There are ones available that do not require purchasing over and over expensive HEPA filters or UV-C bulbs. Both of those items tremendously drive up operational costs.
- **COMMENT:** Laundry: I'm not sure why to use the warmest water setting? Lower temp water is best practice.
- **COMMENT:** I would recommend amending the wording around the list of approved disinfectant actives to be less restrictive. A list to "contain only the following active ingredients" does not allow for future innovation in the area of green disinfection. A couple of approaches could be take here:
Call out the desired environmental and health outcomes that would make an active

desirable for us. Example: non-persistent in the environment, non-asthmagenic, etc.
Adjust the wording of the list so that the actives are listed as examples of preferred
actives. “Purchase disinfectants...that contain environmentally preferred actives. These
can include the following”. This will allow the list to be open-ended to new innovation
that fits within this framework.

Example: Dodecylbenzenesulfonic acid

This is an active ingredient that is highly effective against community spread viruses such
as SARS-CoV-2, influenza, and norovirus, promoting healthy shared spaces.

It is a readily biodegradable surfactant

It is on the Safer Choice Ingredients List as a green circle surfactant

This active would be a good addition to the list of recommended actives in the standard

Comments That Will Be Addressed As Part Of Implementation Guidance and Supplemental Support Materials Development

Healthy Green Schools and Colleges greatly appreciates the following comments, which provide helpful insight into the type of information that will be useful to program participants in the implementation manual and other supplemental materials. The topics addressed in the comments below, including the variety of well-developed guides, resources, and education and training materials, will be incorporated and expanded upon as requested in the implementation materials. However, the below comments did not result in specific changes to the standard itself, as there is a more appropriate resource within the overall program for their inclusion. Note, some comments below include an additional response for context.

General Comments

- **COMMENT:** Will schools need to demonstrate compliance with the criteria just during the initial review? Or will there be a renewal/recertification process?
- **COMMENT:** Schools that reach the top level of achievement will be able to apply for third-party certification, earning public recognition for their verified expertise in providing healthy school environments. How will HGSC maintain consistency on interpretation of various facilities meeting the standards prior to them applying for verification? Considering employee turnover and time, how will HGSC ensure facilities maintain their certification?
- **COMMENT:** GS-42 should be
- referenced in the standard, GS-42 certification should cover requirements in all relevant sections (see below) o Section 2. Training for Cleaning Personnel, o Section 3. Communication - Management (relevant cleaning requirements); GS-42 reference o Section 4. Procurement – Consumable Goods – General Cleaning Products, Paper Products, Trash and Recycling Can Liners; o Section 4. Procurement – Powered Equipment – Vacuum Cleaners & Carpet Extraction Equipment; portions of Section 5

Communication Section

- **COMMENT:** We recommend broadening the consideration for risk to vulnerable populations to include allergens already present in the school. It is important to emphasize the role of cleaning to remove dust, dander, pollen and other allergens. However, the physical nature of cleaning can disperse already present allergens into the air and create risk to vulnerable populations. HCPA proposes modifying the sentence below to read, “Document the occurrence of situations where cleaning operations (due to the agitation of allergens that are naturally present in school settings, such as dust, dander and pollen) have the potential to adversely affect any identified members of a vulnerable population.”

Training Section

- **COMMENT:** ACI understands the importance of training and safety. For this reason, we have developed several informational pieces on the topic of product labels. You can find our “How to Read a Cleaning Product Label” infographic here along with a short video on “How to Read a Label.” We are also currently working on a “How to Read a

Disinfecting Product Label” infographic which should be available in the coming weeks. These products are for anyone using cleaning products either in a home-use setting or industrial and institutional (I&I) settings, pointing out what to pay attention to on product labels.

- **COMMENT:** The American Cleaning Institute has a variety of tools on cleaning and hygiene protocols especially created for schools. We encourage Green Seal to consider and/or reference these in the Standard. Healthy Schools, Healthy People is a joint initiative between ACI and the Centers for Disease Control and Prevention (CDC) dedicated to supporting school systems nationwide with tools to help reinforce hand hygiene and cleaning practices to prevent the spread of infectious disease and reduce related absenteeism. The initiative has information and materials designed for nurses, educators, parents, administrators, and students. As part of the Healthy Schools Healthy People initiative, there is a Commit to Clean Toolkit, which offers resources for school administrators and educators to help communicate the importance of cleaning, disinfecting and hand hygiene for a healthy and successful academic year. All materials align with key public health guidelines and can help keep students safe, healthy, and learning.

Procurement Section

- **COMMENT:** With the variety of product certifications to choose from and these websites not designed for product sorting and navigation, how can we make choosing products easier for facilities to make?
- **COMMENT:** The Standard does point out EPA’s Recommendations of Specifications, Standards, and Ecolabels for Federal Purchasing; however, it does not identify EPA’s Safer Choice program as an exemplary label to help identify products that meet high safety and sustainability standards. It is also the only reputable ecolabel to certify disinfecting products. We believe this to be an oversight of the Standard. Although EPA does include Safer Choice on its list, it is important to specifically acknowledge this program in the Standard, especially for cleaning and disinfecting products.
- **COMMENT:** Section 4: Procurement Consumable Goods - It would be nice to have more guidance here. ISO 14024 Type 1; Global Ecolabel Network; or list the ones that are equivalent
- **COMMENT:** HCPA also believes it is important to note that the use of some active ingredients included in the standard may not be technically feasible across the entire United States. For instance, the volatile organic compound (VOC) limit for non-aerosol products in several states is one percent. The ready to use level for a couple of these ingredients to be effective antimicrobials – ethyl alcohol and isopropyl alcohol – needs to be substantially higher or combined with another non-VOC active ingredient. These types of limitations should be mentioned.
- **COMMENT:** Regarding the list of eligible active ingredients for the draft standard, it would be beneficial to have a citation or reference that provides a rationale for why the specific ingredients are included.

HGSC RESPONSE: Thank you for your comments. In the proposed version of the standard for 2nd public comment, the content in the procurement section has been

modified to reflect (in most cases) Green Seal standards or equivalent. HGSC recognizes that there are a variety of standards within each product category that may also be acceptable. These standards will be considered, evaluated, and documented as appropriate within supplemental guidance for program participants to make it clear which programs will contribute toward compliance. HGSC agrees that we ultimately want this program to help make product selection and specification easier for school districts.

- **COMMENT:** Section 4 of the Standard directs users to Hand Sanitizing Products certified by Green Seal or that fall under EPA's Recommendations for Federal Purchasing. It is critical to note here that the Food and Drug Administration (FDA), not EPA, regulates hand sanitizing products as Over-The-Counter (OTC) Drugs under the Monograph System. In these monographs, FDA details the safety and efficacy studies needed for active ingredients to be determined as Generally Recognized as Safe and Effective (GRASE). During the pandemic, the FDA allowed an expansion of hand sanitizer production, bringing a wide variety of new manufacturers to the market. With this change, many sanitizers entered the market with harmful ingredients such as methanol and 1-propanol. Guidance on hand sanitizers in the Standard should make special note of FDA's guidance on recalled hand sanitizing products.
- **COMMENT:** Procurement, p. 13 – note that vendor contracts should be based NOT on lowest bid, but lowest QUALIFIED bid. Sample contract specifications are included in the IPM for Pennsylvania Schools and Childcares: A How-To Manual; see below.

Facility Operations and Maintenance Section

- **COMMENT:** Cleaning by hand: We have a study that suggests it is not always better for the environment due to the laundry requirements. Would be happy to share if needed
- **COMMENT:** Cleaning by Hand. Determine opportunities to replace single use cleaning products with reusable cleaning cloths. There are several disposable wiper products that have environmental qualities and that are certified by Green Seal, Ecologo and BPI to name a few; are they not viable alternatives for the purposes of cleaning by hand?
- **COMMENT:** While there is a clear benefit to utilizing as many concentrated products as possible, the use of some of the active ingredients may only make sense in a ready-to-use product. The concentration of some of these active ingredients in combination with inert ingredients that make them effective disinfectant options may also result in the concentrate shipping hazardously in accordance with the 49 Code of Federal Regulations; however, both product and ingredient safety is tied to the label and following directions for use, so HCPA recommends adding qualifiers that any of these ingredients can be used safely or pose a hazard depending on concentration or how the product is ultimately used by the end-user.
- Helping schools understand the importance of proper dilution, reading and following use directions, storage and ultimate disposal of these products is valuable and sound guidance to ensure safe use for both applicators and bystanders.

Building Maintenance and Repairs

- **COMMENT:** Outside Cleaning – this section is still in development. I recommend aligning this section with CDC recommendations in the link above for outdoor areas. <https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html>
- **COMMENT:** With regard to "Carpet Cleaning and Maintenance", "Routine Maintenance", when vacuuming the operator should be alert to new spills and/or spots and clean them immediately before they become a stain and more difficult to try to remove. No-rinse cleaning solutions are available (my recommendation is hydrogen peroxide based) for the vacuum operator to apply to the spill or spot and transfer to a towel(s). If the spill is larger, utilize a carpet spot cleaning machine.
- **COMMENT:** The Pest Defense for Healthy Schools – Free Online IPM Training for School Staff
<https://ipminstitute.org/projects/stop-school-pests-online-ipm-training-for-school-employees/school-ipm-2020/> The Pest Defense for Healthy Schools, is one of School IPM 2020's (part of the IPM Institute of North America) signature projects. The Pest Defense is a free online training designed for school who are a part of improving environmental health for students through the safe and effective management of pests. IPM is a team effort and it is important that everyone working in schools knows they play a role in the process. Only by working together can IPM programs reach their full potential! The project is part of a national, multi-agency collaboration with a common goal of reducing risks associated with pests and pest management practices in schools. The team chose to focus on one of the earliest steps involved in the IPM implementation effort–IPM education. The full training course is available at no cost at www.PestDefenseForHealthySchools.com. In-person training materials are available for download here. For questions or feedback on the training, please contact schoolipm@ipminstitute.org.
- **COMMENT:** Site Management Plan - HCPA requests that a reference be added for what is considered a “toxic species”.

Comments That Did Not Result In Substantive Changes To The Proposed Standard

Healthy Green Schools and Colleges appreciates the feedback received below. While this commentary did not result in substantive changes to the proposed standard, each comment submitted was useful in helping HGSC consider its position on the matter discussed, how the requested change would fit into the overall goals of the standard, and ultimately make a determination. Specific responses on each topic that received feedback is provided within each section, below.

Requests for changes to Ice and Snow Melt Removal Requirements

- **COMMENT:** With regard to "Ice Melt and Snow and Ice Removal" I agree that calcium chloride should be avoided but not so sure of other safer chloride blends. Non-chloride ice melters pose other health and safety issues.

HGSC RESPONSE: Thank you for your comment. Green Seal has extensively explored this issue when developing criteria for its Environmental Innovation Program specific to snow and ice melt. All of the chloride-based deicers referenced in the standard contribute toward chloride contamination of soil and local waterways, and should be avoided to mitigate these impacts. Certain non-chloride based deicers, including those made from urea, potassium acetate, and calcium magnesium acetate do also have negative environmental impacts, including contributing toward water pollution and eutrophication. As the proliferation of products that avoid chloride, potassium/calcium-magnesium acetate, and urea increases, HGSC may make further revisions to this requirement to incentivize products with the most significant impact reduction.

Requests for specific product references

- **COMMENT:** Consider instead the Novaerus Protect 200 or Novaerus Protect 900. They do not require operational expenditures beyond power consumption equal to that of a 20 Watt lightbulb.

HGSC RESPONSE: Thank you for your comment. The standard does not make references to specific product brands / items to purchase as it would not promote market fairness and competition. Rather, the standard references criteria / attributes any relevant product could meet in order to contribute toward compliance within the standard.

Requests for removal of reference to HEPA filters

- **COMMENT:** Filters, p.16 – note that HEPA filters will significantly increase both initial cost and energy use. For building ventilation filters ASHRAE has determined that MERV 13 filters provide optimal filtering/cost. Consider revising this recommendation.

HGSC RESPONSE: Thank you for your comments. HGSC has chosen to maintain the reference to HEPA filters alongside MERV-13 and other related air filtration options. To address the potential cost issue, and in wanting to offer school districts latitude in determining which option is most appropriate across their district and within each school,

the reference to HEPA filters is an optional credit worth points, that projects can choose whether or not they would like to pursue as part of certification.

Requests for additional allowable ingredients for disinfectants

- **COMMENT:** The Standard as it is currently written identifies a specific set of disinfectants that should be used. This list leaves out many effective active ingredients important for disinfection, which are found safe for use by the Environmental Protection Agency (EPA). The Standard specifically identifies combination products of peroxyacetic acid (peracetic acid or PAA) and hydrogen peroxide (H₂O₂) as products to avoid. This is shortsighted for two reasons. First, PAA products only exist in combination with H₂O₂. Second, PAA/H₂O₂ products are on EPA's Safer Chemical Ingredient List. Active ingredients on the Safer Chemical Ingredient List go beyond standard EPA safety testing and meet high levels for both safe use and sustainability.

HGSC RESPONSE: Thank you for your comments. It is HGSC's understanding that the Safer Choice Ingredient List (SCIL) does not include formulated products (i.e., PAA/H₂O₂), and that only individual chemicals are included. In addition, SCIL does not account for combinations of any of the chemicals (i.e., even if a manufacturer only used SCIL ingredients to formulate the product, the product is still not guaranteed Safer Choice approval). While there are certainly additional effective ingredients found on the SCIL, the HGSC standard is designed to incentivize the purchase and use of products that improve indoor air quality and avoid ingredients that may pose particular concern when children are exposed to them.

- **COMMENT 1 - QUATS/QAC:** The Standard currently precludes any Quaternary Ammonium Compound (Quat/QAC) products from use. Approximately half of the List N products (EPA's list of products proven effective against SARS-CoV-2) contain a Quat ingredient. These ingredients represent an important chemistry, especially for the ongoing fight against the novel coronavirus, for which many students are still unable to be vaccinated. Reducing the possible tools to fight the pandemic may impact a facility's ability to keep occupants safe. These products are also important tools for fighting a variety of pathogens where surfaces play a role in transmission and are thus an important tool to protecting the health of those using facilities. Additionally, as noted previously, EPA registered products containing Quats are proven safe and effective when used as directed on the label.
- **COMMENT 2 - QUATS/QAC:** Disinfecting Tasks. HCPA requests that the following sentence, "Do not use products that contain quaternary ammonium compounds (quats)" be removed from this section. While we understand that the standard goes above and beyond government requirements by providing a list of ingredients eligible for this standard, the standard should not contradict what the US government allows. Quats have been cleared for use by the US EPA and are considered safe when used according to label directions. During the 2006 review of the quats the EPA concluded that there is a reasonable certainty of no harm for infants and children when quats are used according to directions. The EPA is currently re-reviewing the quats as part of a normal re-evaluation

cycle that all chemicals undergo over the years as part of EPA's comprehensive review program. As part of their review, the EPA takes into consideration all the available scientific literature and makes its decision based on the review of this information. This re-review program is designed to ensure that all registered chemicals are continuously evaluated under current scientific methods and current scientific knowledge to maintain relevant and accurate evaluations of chemicals in the program. The re-evaluation decision for quats is expected in the next year.

HGSC RESPONSE: Thank you for your comments. Quats are a known asthmagens, and using quat/QAC-based products in schools would increase children's exposure to asthmagens. According to the American Lung Association, asthma can be a life-threatening disease if not properly managed. Asthma is the most common chronic condition among children,1 currently affecting an estimated 6.1 million children under 18 years. In order to protect vulnerable populations, HGSC believes quats/QAC should be avoided in schools unless there are supply chain/availability issues with all the alternatives cited within the standard. If future authoritative scientific findings indicate that quats/QAC have a significant different impact profile than currently understood, HGSC will review the findings and consider revisions to the standard as appropriate.

While HGSC understands that quats/QAC account for a large portion of the products on EPA's List N, there are a variety of other products to meet schools needs. In addition, the reference to List N was removed from the standard for typical operations. This will give schools a much wider variety of products to select from during typical operations. Within the implementation guidance, HGSC will clarify that List N be used only in times of coronavirus outbreak in the community.

- **COMMENT:** Add the following to acceptable ingredients for disinfectants on List N: ● non-ionic and/or biosurfactants, probiotics, enzymes

HGSC RESPONSE: Thank you for your comments. Please provide a technical justification, including safety and efficacy data, along with relevant product registration information with the U.S. EPA, for these ingredients to be considered within the disinfectants section. Note, Green Seal has defined requirements to evaluate and ensure their overall environmental preferability of cleaning products that are powders, solids, or non-aqueous liquids, or include enzymes or microorganisms in *GS-37 Edition 7.6*, which may provide certification options for cleaning products within your company's portfolio.

Requests for water efficiency requirements

- **COMMENT:** For your consideration of inclusion should also be the use of less water in cleaning, as many cleaning programs still use water with the misunderstanding and thinking water makes things better. In fact, water will often add layers of residue to surfaces, keep a moist environment which could promote molds in corners etc. In addition, the use and conversion less water consuming fixtures such as faucets, toilets and urinals will also minimize moisture and residue in and on the fixtures. Flushed toilets and urinals spray bacteria laden aerosols, so installing fixtures with as little or no water use

will as well minimize bacteria effects.

HGSC RESPONSE: Thank you for your comments. This feedback is outside the scope and primary purpose of the standard, which is to assist school districts in dramatically improving indoor air quality in schools across their district. In addition, the strategies suggested could be considered capital improvements, which this standard specifically seeks to avoid, as its aim is to provide low- and no-cost measures that school districts with extremely limited budgets would successfully be able to implement.

Requests for requirements addressing automated reporting for janitorial needs

- **COMMENT:** Checklists and cleaning schedules are not enough to ensure that restrooms will be HSE free, clean and sanitary. Include a touchless way for students and staff to give alerts to staff via their own cell phone. No capital, or third party devices needed.

HGSC RESPONSE: Thank you for your comments. While HGSC found this to be an interesting suggestion, it is not necessarily practical for schools. For example, students are often required to keep cell phones in their locker, with teachers, or in an otherwise inaccessible place during the school day. A text-based program would require cell phone use in spaces where they are generally prohibited for students and could create unintended consequences by increasing access and use of devices within the schools.