Calendar Year 2016 Report of the

Environmentally Preferable Purchasing Toxics Reduction Task Force

March, 2017

Prepared by:

Massachusetts Executive Office of Energy and Environmental Affairs
Office of Technical Assistance and Technology (OTA)
100 Cambridge Street, Suite 900
Boston, MA 02114

In collaboration with:

Massachusetts Operational Services Division (OSD)

Massachusetts Department of Environmental Protection (MassDEP)

Massachusetts Department of Public Health (DPH)

Massachusetts Executive Office of Labor and Workforce Development, Department of Labor Standards (DLS)

Toxics Use Reduction Institute (TURI)

Contents

1. Executive Summary

The Environmentally Preferable Products (EPP) program began as an optional program over 20 years ago, helping agencies identify greener and safer products, and resides within the Operational Services Division (OSD).[1] In 2009, Executive Order 515 mandated that executive branch state agencies make the switch from ordinary products to EPPs whenever they represent the "best value" for the job, and recommended other agencies and public entities do the same. The Executive Order also called for the creation of a Toxics Reduction Task Force to provide targeted technical assistance and guidance to agencies. This is the ninth annual report on the efforts of the Task Force for calendar year 2016.

The EPP program has been successful in providing over 40 statewide contracts with environmentally preferable products. These products can be viewed on the EPP website at www.mass.gov/epp. Growth in purchases from all contracts with EPPs has increased more than a hundred-fold from the first days of the program - from 1994 to 2016, eco-purchases on the statewide contracts grew from $5 million to just under $400 million, representing about a quarter of all purchases from statewide contracts.

A major focus of the Task Force has been transitioning executive agencies, and others, to greener cleaning programs. The Task Force worked with OSD to award the first statewide all green cleaning products contract in the country in 2009,[2] enabling public buyers at the time to purchase safer and healthier products from a statewide contract. The contract was rebid in 2013, to *FAC85: Environmentally Preferable Cleaning Products, Programs, Equipment and Supplies*, and specifications for this contract were tightened for environmental performance.

The Task Force also developed and presented trainings to multiple state agencies in green cleaning practices, and lastly, provided hands on technical assistance to help agencies transition. The Department of Conservation Resources (DCR), Department of Transportation (DOT), the Massachusetts Bay Transit Authority (MBTA), in addition to schools, have participated in trainings and technical assistance and used the statewide green cleaning products contract. Purchases from the FAC85: Environmentally Preferable Cleaning Products, Programs, Equipment and Supplies statewide contract grew from $1.7 million in 2010 to over $12.5 million in 2015, reflecting the success of the program. The OSD was also honored to receive national recognition this year from the Sustainable Purchasing Leadership Council and the National Association of State Procurement Officials for success and innovation on this contract.

Other Task Force works in CY2016 included working through issues regarding how local boards of health and test for disinfection. More research and discovery was conducted in CY2016 to unveil the complexities over regulations and authority. The Task Force also completed its protocol for evaluating products and technologies submitted by vendors through the Alternative Approval process for FAC85, which resulted in approving a new sanitizer.

The Task Force worked closely with OSD to finalize the Environmentally Preferable Products Furniture project. The Task Force identified Flame Retardant chemicals as a chemical of concern in furniture,

[1] OSD facilitates and guides the evaluation, acquisition, management, and disposition of goods and services. www.mass.gov/osd

[2] Known as *FAC59: Environmentally Preferable Products, Programs, Equipment and Supplies*

which has been an outgrowth of national science-based research in addition to changes in national and state fire codes allowing furniture to be flame retardant free if meeting fire protection criteria.[3]

OSD partnered with the Center for Environmental Health, a national non-profit dedicated to identifying and eliminating toxic chemicals that pose the greatest threats, and which has done extensive science-based work on flame retardant chemicals. The project quickly extended beyond identifying flame retardant free furniture, and included other chemicals of concern in addition to asking for third-party certifications to verify environmental and health claims. OSD surveyed all vendors and manufacturers on statewide contract on their product lines, identified that in fact there were over 350 lines of furniture that were considered environmentally preferable, and published the findings at OSD EPP Furniture webpage.

The Task Force also consulted on the statewide contract for Integrated Pest Management (IPM) which was awarded in April of 2016 and included a requirement to provide full disclosure of products used. Bidders provided information on their use of "safer" pesticide products. In addition, the Task Force helped facilitate education to Fleet Managers and vendors on pollution prevention opportunities offered through OTA.

2. Overview of the Toxics Reduction Task Force and its Goals

The Toxics Reduction Task Force was established to facilitate progress with the 2009 Executive Order 515, establish an Environmental Purchasing Policy, and direct all Commonwealth executive departments to procure EPPs and services whenever such products and services are readily available, perform satisfactorily, and represent the best value to the Commonwealth.

The Executive Order was the result of successful EPP contracts that demonstrated that products that are less toxic, conserve natural resources, and produce less waste can also be effective in terms of cost and performance. The first EPP contracts for products using recycled materials were established by the Operational Services Division (OSD) in the mid-1990s as an outgrowth of the "Clean States" project (now the "Leading by Example" program). By the late 1990s, with the help of the state's Toxics Use Reduction (TUR) program, OSD made Massachusetts the first state to designate a "multi-attribute" EPP category: green cleaners.[4] In contrast to creating a single attribute preferable status for recycled content copy paper, green cleaners were evaluated according to their impact on workers, water quality, waste, and many other aspects of use.

The Executive Order formalized the relationship between the state's Toxics Use Reduction program[5] and agencies concerned with greening operations, and created the Toxics Reduction Task Force co-led by the Office of Technical Assistance (OTA) and OSD's EPP program. It allowed the EPP Program to set

[3] See page 4, Guidance for Environmental Preferable Furniture: Review of Chemicals of Concern and Certifications & Standards, August 2016: http://www.mass.gov/anf/docs/osd/epp/epp-furniture-guidance.pdf

[4] EPA discusses this and other Massachusetts EPP innovations in its 2000 publication, State and Local Government Pioneers: How State and Local Governments Are Implementing Environmentally Preferable Purchasing Practices https://www.epa.gov/sites/production/files/2015-05/documents/statenlocal.pdf (accessed 3/15/16).

[5] Massachusetts Toxics Use Reduction Program: http://www.mass.gov/eea/agencies/massdep/toxics/tur/toxics-use-reduction-act-tura-program-overview.html

minimum environmental standards on products,[6] and represented a transition from simply identifying and qualifying environmentally preferable products that state agencies should buy, to requiring their purchase by state agencies when appropriate. It also directs agency department heads to designate an EPP liaison, requires an increase in EPP purchases includes incorporation of environmental specifications into contracts, construction, leases, and requires agencies to educate staff on EPPs.

Over forty statewide contracts contain environmentally preferable products, and many have products with less toxics alternatives.[7] Growth in purchases from all EPP contracts has increased almost a hundred-fold from the first days of the program: from 1994 to 2016 purchases on the statewide eco-purchasing contracts grew from $5 million to just under $400 million today, representing a quarter of all statewide purchases.

3. Safer Cleaning Products

The OSD green cleaning products contract, *FAC85: Environmentally Preferable Cleaning Products, Programs, Equipment and Supplies*, had been a main focus of the Task Force since 2009. This past year the contract received national attention – and was recognized by two national non-profits with the following awards:

Sustainable Purchasing Leadership Council: OSD was recognized with a Purchasing Innovation Award for work to develop the all green cleaning products multi-state contract.

National Association for State Procurement Officials: OSD was awarded a Bronze Cronin Award which recognized FAC85 as an outstanding procurement initiative resulting in distinct benefits to the State in economy, efficiency, and delivery of services.

These awards recognize the national leadership role the Commonwealth has taken in advancing the use of environmentally preferable cleaning products in the marketplace.

As background, the OSD originally bid the first all green cleaners contract in 2009, called *FAC59: Environmentally Preferable Cleaning Products, Programs, Equipment and Supplies*, and partnered with a number of surrounding northeastern states. Specifications were developed with assistance from the Task Force. The contract included 21 vendors that provided green cleaning products that met third-party standards for environmental performance. At the time, this was the first statewide contract for all green cleaners that used third-party certified products. The Task Force was instrumental in providing feedback and assistance to the Sourcing Team in bidding this contract, which has had a large impact on not only the demand for green products in MA, but also the number of products available.

Because executive departments are required to use statewide contracts, the contract was a tool needed to transition facilities to green cleaning programs. Over the next few years (and reported in Task Force

[6] Minimum Environmentally Preferable Products and Services Specifications Guide, Updated 8/1/16, http://www.mass.gov/anf/budget-taxes-and-procurement/procurement-info-and-res/procurement-prog-and-serv/epp-procurement-prog/epp-resource-center/publications-and-other-resources.html#epp_policies

[7] See "Find EPPs on Statewide Contract" webpage at: http://www.mass.gov/anf/budget-taxes-and-procurement/procurement-info-and-res/procurement-prog-and-serv/epp-procurement-prog/green-products-and-serv/specific-epp-statewide-contracts/

Annual Reports) the Task Force provided a number of general and targeted trainings, developed guidance documents, put together case studies and provided, through the Toxics Use Reduction Institute Cleaning Lab, hands-on technical assistance to state agencies needing help navigating to a green cleaning program. Many of these publications can be found on the Green Cleaning Webpage on the EPP website.

The contract was re-bid in 2013 and included expanded and more stringent environmental specifications.[8] The bid received a surprisingly large bidder pool of 36 vendors, reflecting a greater acceptance of these greener products in the marketplace. Today the contract has 16 vendors and close to 17,000 products available.

All purchases of green products reported by FAC85 vendors in fiscal year 2016 (FY16),[9] which included sales to state departments, municipalities, and authorities, and other states, indicated green purchases of over $12.5 million dollars, up from just over $9 million in fiscal year 2015. Purchases from Commonwealth executive agencies increased from $3,328,880 in FY15 to $4,215,000 in FY16. The top executive agency usage includes:

FY2016 Top 10 Executive Agency FAC85 Contract Users and Associated Contract Spend

Department of Correction	$	2,226,376
Department of Public Health	$	746,130
Soldier's Home Massachusetts	$	271,202
Department of Developmental Services	$	204,435
Department of Conservation and Recreation	$	137,036
Department of Children and Families	$	126,736
Department of Youth Services	$	111,235
Military Division	$	95,928
Executive Office of Energy and Environmental Affairs	$	85,048
Department of Mental Health	$	83,868

Safer Disinfection and Sanitization:

The Task Force continues to assist with research and specification setting for disinfectants and sanitizers that represent a lesser impact to public health and the environment while ensuring efficacy and high performance. Notably, these products are devoid of chemicals that are known to cause asthma, cancer, and skin sensitization, except for food-contact surface sanitizers, which may contain peroxyacetic acid, an asthmagen. In 2010, the Task Force developed *Criteria for Disinfectants, Sanitizers and Mold/Mildew Remediation* under the FAC59 contract that prohibited certain chemical compounds such as chlorine bleach, quaternary ammonium compounds, and other biocides from the active ingredients in products offered on the contract. The Task Force reviewed all products for compliance, and eventually developed an "approved products list for FAC59" which allowed buyers to easily search for approved products that had a lesser impact to public health and the environment, including those for sanitizers and

[8] See Attachment A: Mandatory Specifications and Desirable Criteria for FAC85 located at http://www.mass.gov/anf/budget-taxes-and-procurement/procurement-info-and-res/procurement-prog-and-serv/epp-procurement-prog/green-products-and-serv/specific-epp-statewide-contracts/green-cleaning-products.html

[9] The Commonwealth fiscal year spans from July 1 – June 30 of each year.

disinfectants.

For the rebid of the contract to FAC85, the Task Force was consulted for specification review. The Task Force researched information from multiple studies, including a new publication at the time from the City and County of San Francisco titled *Safer Products and Practices for Sanitizing and Disinfecting Surfaces,*[10] where researchers compared health hazards, environmental impacts, germ-killing claims, surface incompatibilities, and other factors for 11 common active ingredients, 33 representative disinfectant products and 24 surface sanitizer products. The Task Force chose to expand on the previous specifications and to include not only a "prohibited active ingredient" list but also an "accepted active ingredient" list. These may be found in Attachment A: FAC85 Mandatory Specifications and Desirable Criteria, under Category 3: Disinfectants and Sanitizers (see footnote #7 for reference location) and also outlined below:

Disinfectants & Non-Food Contact Surface Sanitizers	Food Contact Surface Sanitizers
Prohibited "Active Ingredients" • Chlorine Bleach (Sodium hypochlorite) • Hydrogen chloride (HCl) • Phenols (e.g., Ortho-phenylphenol) • Pine oil • Quaternary ammonium chloride compounds (e.g., Benzalkonium chloride, ADBACs, DDACs) • Silver • Thyme oil	**Prohibited "Active Ingredients"** • Chlorine Bleach (Sodium hypochlorite) • Hydrogen chloride (HCL) • Quaternary ammonium chloride compounds (e.g., Benzalkonium chloride, ADBACs, DDACs) • Silver • Thyme oil
Acceptable "Active Ingredients" • Hydrogen peroxide (including Accelerated Hydrogen Peroxide) • Citric Acid • Lactic acid • Caprylic acid • Food Grade Dichloroisocyanurate (NaDCC) with CAS#2893-78-9 (Must be able to maintain a pH from 4-6.5. Only to be sold in tab form)	**Acceptable "Active Ingredients"** • Hydrogen Peroxide • Peroxyacetic acid • Lactic Acid • Citric Acid • Caprylic Acid

Mandatory Active Ingredient Criteria for Disinfectants and Sanitizers on FAC85

Alternative Product Review:

The Task Force also provided input into language for the FAC85 contract that would foster innovation in green cleaners. Because the market for green cleaners is increasing rapidly, the Task Force recommended a process for awarded vendors to propose innovative environmentally preferable products for the contract that fell outside of the specifications. The Alternative Approval for Environmentally Preferable Products/Equipment for FAC85: Environmentally Preferable Cleaning Products, Programs, Equipment and Supplies Form was developed to guide vendors in submitting

[10] Safer Products and Practices for Sanitizing and Disinfecting Surfaces, 2014: http://www.sfapproved.org/comprehensive-report-safer-disinfectant-products

information regarding an alternative approval.[11]

Through CY16 the Task Force developed review criteria for the alternative product submittals. The criteria include screening for compliance with the FAC85 specifications in addition to a review of efficacy, environmental and health criteria. Weights were applied to the criteria, and those meeting the evaluation criteria were accepted. Two products were proposed for review at the end of CY15. The task force completed its review of one of the products and added an approval for the following active ingredient to the contract for disinfectants and non-food grade surface sanitizers:

- Food Grade Dichloroisocyanurate (NaDCC) with CAS#2893-78-9 (Must be able to maintain a pH from 4-6.5. Only to be sold in tab form).

When mixed with water, the resulting solution yields hypochlorus acid (HOCL), as opposed to hypochlorite (OCl), which is found in traditional bleach. Due to differences in pH and free available chlorine (FAC) between the two, the Task Force evaluation criteria were met and the Dichloroisocyanurate (NaDCC), also known as Sodium Troclosene, was added as an active ingredient to Category 3A: Disinfection (including Antimicrobial Mold & Mildew Cleaners) and Non-Food Contact Surface Sanitizers.

NaDCC has a pH of ~6.5 when dissolved in water, allowing it to maintain a slight acidity resulting in the hypochlorous acid (HOCL) predominating. Once in solution, NaDCC releases only 50% of its total chlorine content as free available chlorine (FAC). As the free available chlorine is consumed, it continues to release the remaining chlorine to maintain the free available chlorine in the solution. The FAC coupled with the pH provides disinfection power.

Sodium hypochlorite (OCL) in bleach is often stabilized with caustics and as a result, and has a pH of 11 or higher, making it more hazardous. It is also less efficacious because sodium hypochlorite releases all of its chlorine content as free available chlorine at once and as they are consumed, and there is no replenishment.

Expanding Third-Party Certification to All Categories on FAC85:

As reported in the FY15 Annual Report, the FAC85 Sourcing Team, with input from the Task Force, approved the use of three independent third-party certification programs[12] that chemical and paper products must meet to be accepted for use on the contract: GreenSeal, UL Ecologo, and for use in Category 4: Specialty Cleaners and Category 8: De-icing and Snowmelt Products, EPA's Safer Choice products were accepted.

Over the past few years the FAC85 Sourcing Team has engaged the EPA Safer Choice program in a discussion to explore changes that would enable the Sourcing Team to accept all Safer Choice products in all contract categories. Some of the concerns identified by the team included: allowing companies to qualify for a label before an onsite audit had been completed; clarification on criteria for asthmagens;

[11] Toxics Reduction Task Force Alternative Approval Form

[12] This means that the environmental claims, as well as product performance, have been tested and certified by an established and legitimate, nationally-recognized third-party certification program

increase in enforcement of label misuse; shortening the timeframe for companies out of compliance to get into compliance; providing for increased public participation into substantive changes to the program, and concern with the term "screen" throughout the Safer Choice documents, which fail to explicitly state that ingredients that do not meet a standard or criteria will be excluded. Many of the issues were resolved in the discussions, although a few issues remain. The FAC85 Sourcing team, with input from the Task Force, will continue to work with EPA in an effort to come to agreement, in order to allow all Safer Choice products on the contract.

Local Board of Health Testing for Disinfection:

Over the last year, the Task Force has continued to research how to work with local boards of health to allow for FAC85-approved disinfectants/sanitizers to be used. The current food code requires verification of sanitization processes, and the available methods are designed for the use of bleach and quaternary ammonium compounds. When the required test for safe food preparation surfaces is to check the strength of the chlorine preparation that is used, then only chlorine preparations will be used. The Task Force met with the Department of Public Health's Food Protection Safety Program to explore issues related to making the transition to safer sanitization and disinfection which would include adjusting the verification requirements to meet their protective purposes and reduce environmental and health impacts through allowing safer alternatives, such as hydrogen peroxide, citric or lactic acid, or steam.

The Lowell Center for Sustainable Production has been working on cleaning and sanitizing issues related to food processing and received an EPA grant this past year on this topic. The Task Force has been participating in multi-agency meetings related to this subject, since we share common goals of identifying safer alternatives that may be used to sanitize and disinfect. Much of the work the Task Force has done regarding safer sanitizers and disinfectants is being used to guide the discussions.

4. Commonwealth Outreach and Training on Green Cleaning

As stated earlier, the FAC85 contract was only one tool to aid facilities in transitioning to a green cleaning program. Vendors, as part of the contract requirements, are required to provide a certain level of training and technical assistance to help facilities transition. However, the Task Force recognized that even more "facilitation" was needed with state agencies. The Toxics Use Reduction Institute's Cleaning Lab (TURI Lab), a national expert in green cleaning process and design, has been instrumental in providing technical assistance to executive agency facilities in beginning the process of transitioning to a green cleaning program. The TURI Lab has played an important role in helping the following departments identify and plan for green cleaning program development.

A. Department of Conservation and Recreation (DCR)

DCR has made great progress by transitioning over 100 facilities to green cleaning programs.

Water Supply Protection and other West Region:

- All 29 swimming pool facilities were assisted in transitioning to a green cleaning program and are reported to be in full compliance in CY16. Each pool purchased a green cleaning "kit" which included an FAC 85 approved all purpose peroxide cleaner, an enzyme cleaner for urine and

other organic issues, a peroxide sanitizer/disinfectant, a dilution gun, a foaming gun, bucket-less mops, cloths, mop heads, a long handle brush and squeegees. Training was conducted by the vendors to employees at each pool location on how to use the products. Janitorial papers and recycled content liners were also purchased from FAC85. Each spring the pools receive refresher training from the vendors on an as needed basis. Having a direct contact to the vendor was instrumental to the success of the program.

- The TURI Lab and a FAC85 vendor also worked with the Pittsfield District to set up demonstration programs with FAC85 approved products and equipment. These programs were toured by all supervisors in order to facilitate questions, interest, and ultimately their buy-in. The Western region office ultimately purchased 34 green cleaning "kits," one for each site, and training sessions were set up with the vendors before opening for the season.
- Cochituate Park purchased a number of green cleaning starter kits, and training was conducted in the spring.

Central Region: This region completed a number of demonstrations from possible vendors, and initially selected two vendors from FAC85 to provide them with service and products. They selected a vendor to use going forward so that there will be no mix-up on different products.

***Wachusett Reservoir*:** The West Boylston facility became a green cleaning demonstration facility for DCR. They purchased a cleaning system that produces cleaning products on-site. The system uses catalysts in sodium chloride, citric acid and in some cases potassium chloride to produce glass cleaner, an all-purpose cleaner, and a heavy duty degreaser. In addition, they supplemented their process with other equipment, including a steam cleaning system, reusable microfiber cloths, reusable mop pads and a bucket-less mop system. For disinfection, they transitioned to a peroxide product used only when needed.

North Region: Bradley Palmer State Park was converted to a full green cleaning program in 2014 (see case study: Going Green with Cleaning at DCR - Bradley Palmer State Park), and at Salisbury Beach State Park staff worked with one of the FAC85 vendors to identify appropriate cleaning products as well as hand soap for their first aid stations. The vendor provided trainings to campsite staff and volunteers.

Boston Region and Campgrounds*:* continued work with all facilities in transitioning to a green cleaning program.

B. Department of Transportation (MassDOT)

In CY15 the TURI Lab began to work with MassDOT to transition some of their offices and depots to green cleaning programs, with much of the work happening throughout CY16. MassDOT interviewed four FAC85 vendors, and ultimately chose one. They worked closely with the vendor to identify products and program for the administrative building in Lenox, and continued their work with the 14 maintenance facility depots. Today, 13 of 14 depots have gone green, in addition to the administrative building. This included choosing greener options for cleaning supplies (mops, microfiber cloths), toilet bowl cleaner, dishwashing liquid, floor finish, stripper, urinal cakes, hand soaps, and glass cleaner. The repair facility has made great strides toward green cleaners but a degreaser in green formulation is still being sought. In addition the following products were chosen with listed benefits:

- Sanitizers: Food grade tablets with Dichloroisocyanurate (NaDCC) as the active ingredient were chosen. These portion controlled tablets were very cost effective, and were also used to sanitize mops during the weekend, which reportedly tripled the mop life.
- Drain cleaner (enzyme): The facilities had many issues with their floor drains, and the new product helped to get rid these issues.
- Hand scrub: The garage tested a number of different hand scrubs and found one that worked, however they have not been happy with the smell and continue to test other products. They also switched to a wall mounted solution saving over 5lb per month. They are still working to find a solution.
- Multipurpose cleaning product: A switch was made to using concentrated cleaners in portion control packages. After the initial expense for reusable spray bottles the cost per quart is significantly less – reflecting a savings of nearly $1.00 per quart for general purpose cleaner and $1.90 per quart for glass cleaner. Additional savings can be realized if factoring in the savings by not shipping diluted products with additional weight. They still continue to have to train staff in mixing the product.
- Janitorial paper products: Products with recycled content and those using "air dried" pulp were chosen. The air dried pulp proved to absorb more liquid, reducing use (at depot, hand washers were using 7-8 towels before the switch and 3 towels after).
- Liners: Bags with recycled content were selected.
- Mold reducer: A vendor provided a protective coating to curing rooms and nearly a year later they are mold free.

Anthony Morris, Assistant District Administrator at MassDOT reported that "Partnering with an FAC85 vendor who worked with the TURI Lab was key to our transition. Their supplying of samples for testing, being right there….allowed all parties to know what the expectations and needs were. I can only encourage everyone to find a partner for this ever changing journey. We worked together leaving MassDOT a little greener every day."

C. Massachusetts Bay Transportation Authority (MBTA)

The TURI lab continued to work with the MBTA cleaning bus depot staff to identify greener options. The bus cleaners added an environmentally preferable disinfecting process, as reported in their Team Works newsletter in February 2016 (see Appendix A). The MBTA will be working on a new contract for cleaning contractors, and it is hoped that much of the work provided by the TURI Cleaning Lab will be integrated into requirement for the program. It is especially important that a process to have products vetted through the cleaning contractor as well as the MBTA staff happen so that products chosen will work to their specifications. The Task Force will continue providing the MBTA information and resources as necessary.

D. Greenfield Health Department

The Greenfield Health Department worked with local restaurants to switch from the three approved toxic Food Code sanitizers to less toxic sanitizers. Many are unaware of the health effects that stem from the use of bleach, quaternary compounds, and iodine. With help from the TURI lab, the Greenfield

Health Department educated local restaurants of the health effects of the three approved sanitizers and also provide them with alternatives. The Greenfield Health Department also launched a Green Restaurant Program. With the Green Restaurant Program, local restaurants could apply to be a "Certified Green Restaurant" if they meet a set number of standards created by the Greenfield Health Department. If they meet the standards, they will be given a sticker for their door and the first five restaurants that become certified will be featured in The Recorder, a local newspaper for Franklin County.

This project helped provide five establishments with at least six months or more of a less toxic sanitizer and less toxic cleaning supplies. The TURI lab and the Greenfield Health Department met with the five participating establishments several times to discuss the restaurants specific needs in their establishments regarding less toxic sanitizers and cleaning supplies. Many of the establishments asked about glass cleaners, all-purpose cleaners, and degreasers. All five establishments agreed to at least use the NADCC tablets (Sodium dichloroisocyanurate) provided to them as an alternative to the toxic sanitizers – the tablets are used for on-site generation of the sanitizer. This project also helped to educate all of the local establishments about less toxic sanitizers and give out samples of the tablets, the chosen sanitizer, during routine inspections.

E. Massachusetts Action Asthma Partnership

The Massachusetts Action Asthma Partnership (MAAP) reached out to the EPP Director to identify ways to work together to publicize the FAC85 contract to schools. Because the contract was developed with input from constituents in the health field with a main focus to eliminate asthma causing chemicals from products, they were interested in publicizing the contract for school use. They learned more about the contract, and continue to educate school officials and teachers on the availability of FAC85.

5. Flame Retardants and Other Chemicals of Concern in Furniture

In CY15 the Task Force identified flame retardant chemicals in furniture as a target issue. Flame retardants are semi-volatile organic compounds used in commercial and consumer products to meet flammability standards. One such flame retardant, organohalogens, including polybrominated diphenyl ethers (PBDEs), has been added to polyurethane foam in furniture for many years, to meet the flammability standards. These chemicals migrate out of products and into dust where humans ingest or inhale them.[13] However, there are growing environmental and health concerns, and now a well-established body of research, indicating that flame retardant chemicals are harmful to human health and the environment.[14] [15] Studies by the U.S. Consumer Product Safety Commission have also concluded that flame retardants as used in furniture do not provide meaningful protection from fires.

[13] An assessment of sources and pathways of human exposure to polybrominated diphenyl ethers. Johnson-Restrepo, B. and Kurunthachalam http://www.sciencedirect.com/science/article/pii/S004565350900294X

[14] See all sources listed in the Center for Environmental Health's Kicking Toxic Chemicals Out of the Office; An Easy Guide to Going Flame Retardant Free, July 2015, p.15, http://www.ceh.org/wp-content/uploads/Flame_Retardant_Guide_Corp_FINAL-with-date.pdf

[15] Halogenated Flame Retardants: Do the Fire Safety Benefits Justify the Risks? Reviews on Environmental Health, VOLUME 25, No. 4, 2010, http://greensciencepolicy.org/wp-content/uploads/2013/11/Review-of-Env-Health-2542010-SHAW-BLUM-.pdf

The OSD's EPP Program reached out to the Center for Environmental Health,[16] a national leader in flame retardant health issues and author of *Kicking Toxic Chemicals Out of the Office; An Easy Guide to Going Flame Retardant Free, July 2015*, to help. A project was defined, with a goal to identify flame retardant free furniture on statewide contract *OFF38: Office, School and Library Furniture, Accessories & Services*, but quickly expanded to create a resource that helps buyers identify important information they need to guide productive discussion with vendors so they can make environmentally informed choices when purchasing furniture from the contract. A survey was sent out to all vendors (and many of the furniture manufacturers in cases when vendors did not know or could not provide information), asking to identify the following chemicals of concern, in addition to a number of third-party documented environment certifications or other environmental standards applicable to furniture that may be of interest to large volume buyers who specify these certifications or standards in their bids:

- Formaldehyde and other Volatile Organic Compounds (VOCs) emissions
- Antimicrobials
- Flame retardants
- Polyvinyl chloride (PVC)
- Per- and poly-fluorinated chemicals used as stain/water/oil resistant treatments

Currently, these chemicals are not restricted from use on the statewide furniture contract, but they are toxic or hazardous and have documented indoor air quality, environmental, and/or health concerns so the Task Force wanted to identify better options for buyers.

The information was compiled into a table and published on the OSD's EPP Furniture webpage. The table includes close to 900 lines of furniture, of which 350 are considered "environmentally preferable". A peer reviewed guidance document was developed that describes the chemicals of concern typically used in the furniture industry and a list of some of the certifications and standards that have been used to measure environmental performance of furniture[17] and also provides alternatives/recommendations for those seeking to minimize exposure to the above mentioned substances in furniture. Lastly, a few key questions were identified to help guide buyers in their purchasing decisions.

- Ask the vendor to assist you in selecting options that do not contain indoor air contaminants including formaldehyde and other VOCs; flame retardant chemicals; fluorinated stain treatments; antimicrobials; and PVC (polyvinyl chloride). If flame retardants are required, specify the use of "non-halogenated" flame retardant chemicals, meaning they don't contain bromine or chlorine.
- Ask the vendor to help you identify fabrics free of fluorinated stain treatments, antimicrobials, PVC, and/or flame retardants. Proper fabric choice is essential to ensure a healthier product.
- Ask the vendor if recycled content is used in any component of the product and, if so, ask if they know the source of the recycled content and if they can confirm whether it contains any of the

[16] The Center for Environmental Health (CEH) is a nationwide organization focused on identifying and eliminating the use of toxic chemicals that pose a risk to human health. www.CEH.org

[17] Guidance for Environmental Preferable Furniture: Review of Chemicals of Concern and Certifications & Standards, August 2016.

identified chemicals of concern. While the use of recycled content generally is a positive environmental attribute, the use of recycled content plastics has the potential to introduce one or more of the chemicals of concern into the product.

- Ask your vendor for verification of third-party certifications or compliance to any claimed attributes.

These resources allow buyers to easily identify furniture that is free of certain chemicals of concern, enabling choices that contribute to a healthier indoor environment.

The availability of these new OFF38 resources coincides with a City of Boston regulation that took effect on July 7, 2016. This new bill amends Boston's Fire Prevention Code, allowing offices and residential areas to use furniture free of toxic flame retardant chemicals. Other public buildings or assembly areas that are fully sprinklered – including healthcare facilities, dormitories, and schools – also may observe the new code, though all organizations should check with their Authority Having Jurisdiction (AHJ) to ensure compliance. With the passage of this Boston regulation, organizations throughout the Commonwealth may now opt for flame retardant free furniture and an array of EPP choices on Statewide Contract OFF38.

The published resources have generated lots of national discussion on how to define "EPP Furniture" across the country. The EPP Director has been asked to participate in a number of workgroups and webinars with state and federal agencies to describe what the Commonwealth completed. Our recommendation has been to use of the model table format that was developed, and require all vendors to fill out prior to contract awards. With over 350 lines of furniture found to be environmentally preferable, there may be a case for the Commonwealth to further define the specifications at the next re-bid of the contract.

Going forward, the Task Force will be working to publicize this work to executive agencies on the contract.

6. Integrated Pest Management

Integrated Pest Management (IPM) is a process for achieving long term, environmentally preferable pest control through the use of a wide variety of management practices. It includes a combination of pest monitoring, good sanitation practices, education, and appropriate solid waste management, building maintenance, cultural pest control measures, mechanical pest control measures and biological pest controls – and allows, if done properly, chemical pesticides to only be used as a last resort. Inappropriate pest management approaches can degrade the indoor air quality and introduce asthma and other hazards, and may result in inadequate control of pests. For these reasons, IPM is included in the US Green Building Council's 2009 LEED for Existing Buildings/Operations & Maintenance (LEED-EBOM) certification.

The Task Force weighed in on some of the specifications developed in the re-bid of statewide contract FAC74: Integrated Pest Management to FAC96. This new contract was awarded April of 2016. The statewide contract provides a comprehensive list of pre-qualified vendors that eligible users can engage to develop customized IPM plans.

All facilities owned or managed by the Commonwealth are required to implement IPM programs as establish through Executive Order 403, signed in 1998. Going forward, the Task Force will try to identify which executive departments are using the contract, which are not, and target them for additional information.

7. Pollution Prevention for Automotive and Fleet

The OSD hosted its first State Fleet Event bringing together many automotive-related vendors on statewide contract and fleet managers to learn about the array of fleet-related products and services on statewide contract.

This event was well attended, and OTA staffed a table to offer their Massachusetts Clean Auto Repair (MassCAR) Program educational materials and resources to automotive vendors and attendees. OTA created the MassCAR Program to provide environmental training and resources for auto body and repair shops. The program is designed to help automotive facilities:

- Understand and achieve compliance with environmental, health and safety (EHS) requirements.
- Learn about and implement pollution prevention and other best management practices.

MassCAR consists of an environmental and compliance guidance document and OTA provides free trainings to auto body and repair shops, including automotive vendors on state contract. The guidance includes:

- MassCAR checklist - A summary of actions a shop can take to ensure that requirements are followed and show the businesses' good faith efforts to stay in compliance while protecting their workers and the environment.
- MassCAR fact sheets - provide information, benefits, possible obstacles, and steps forward for implementing pollution prevention, environmental and worker health and safety practices to auto body and repair facilities.
- The MassCAR Environmental Achievement Statement - A self-certification document that can be used to advertise and celebrate successful environmental practices.

OSD communicated the availability of the resources to statewide contract vendors including Fiat Chrysler, Ford, Hyundai, GM, Nissan, and Toyota, in addition to public fleet managers across the state.

8. Snow and De-Icing Chemicals

Specifications were developed for EPP De-icing and Ice Melt Products as part of the FAC85 contract in 2013.[18] These included a restriction on sodium chloride-containing products, in addition to a requirement that the products be listed either on the Pacific Northwest Snowfighters Qualified Products List or recognized under the US EPA's Safer Choice program. After the first year of the contract, the vendors reported difficulty sourcing product, especially product without sodium chloride. A decision was

[18] FAC85 Mandatory Specifications and Desirable Criteria, Category 8: De-Icing and Ice Melt Products, page 15. http://www.mass.gov/anf/docs/osd/epp/attachment-a-fac85-mandatory-specifications-and-desirable-criteria.docx

made to relax the specifications for Massachusetts to allow any product that met the US EPA's Safer Choice program, expanding the pool of products available.

9. OSHA – Commonwealth Compliance

Under MGL section 6-1/2 (as detailed in 454 CMR 25.00), executive branch state agencies are required to comply with OSHA standards. The Department of Labor Standards ("DLS") is responsible for enforcing this. DLS conducts health and safety inspections and accident investigations at public sector workplaces to assist employers in reducing work-related illnesses and injuries. DLS is a member of the Toxics Reduction Task Force. In CY2016, DLS conducted 45 site inspections which included corrective actions for employers to improve their Right-to-Know or Hazard Communication program. These inspection reports included recommendations to select asthmagen-free products on FAC85. Inspection sites included county, municipal, and state agencies.

DLS also includes recommendations for EPP products and FAC85 in Right-to-Know trainings and webinars. In addition, the DLS website contains a fact sheet on EPP, and a template Right-to-Know program. The EO515 efforts and FAC85 have been incorporated into the template.

10. Conclusions and Looking Ahead

In CY17, the Task Force will continue its work on advancing green cleaners and safer sanitization and disinfection in the Commonwealth. The Task Force will:

- participate in discussions with the Lowell Center for Sustainable Production project on safer sanitization and disinfection options for the food processing industry;
- continue to work with the Massachusetts Department of Health to identify safer alternatives, such as hydrogen peroxide, citric or lactic acid, or steam, which can meet the Commonwealth's Health Codes, continue;
- continue evaluating alternative approvals submitted by the FAC85 Vendors;
- continue to provide feedback on negotiations with the EPA's Safer Choice program on making updates to their program in order to allow all Safer Choice products on the contract;
- continue to identify disinfecting alternatives for DLS to communicate in trainings and webinars;
- continue to follow up with statewide contract automotive vendors and fleet managers on MassCAR opportunities;
- identify state entities use/non-use of FAC85. For those not using – find out more and identify needs; and,
- document DCR and DOT green cleaning programs with a case study.

The Task Force will also continue to publicize results of the EPP Furniture Project to furniture buyers and if time allows begin to research, using vendor reported data, information on executive agency usage of the IPM contract.

Lastly, the Task Force will begin to plan for and execute an annual EO515 survey to executive agencies in order to identify compliance with the Executive Order, and help the Task Force target assistance.

Appendix A

MBTA TeamWorks Newsletter article on “Keeping The T Clean and Green”

THE MBTA EMPLOYEE NEWSLETTER. FOR YOU, BY YOU, ABOUT YOU.

TEAMWORKS

VOLUME 69
FEBRUARY 2016

KEEPING THE T CLEAN *AND* GREEN

TIM LASKER

Ryan Flynn, Superintendent of Cleaning and Maintenance, Bus and Rail Operations

Ryan Flynn, Superintendent of Cleaning and Maintenance, Bus and Rail Operations, oversees the cleaning and disinfecting of all vehicle interiors—a demanding job, particularly in light of the challenges he and his team deal with on a daily basis.

Recently, Ryan has been investigating ways to add an additional level of sanitized protection to vehicle interiors—a task that becomes more important during flu season—while at the same time using the most environmentally safe products.

Ryan has turned to the Toxic Use Reduction Institute (TURI) at the University of Massachusetts Lowell for recommendations. TURI provides resources and tools to help make Massachusetts a safer and more sustainable place to live and work.

The good news for Ryan and the MBTA's cleaning contractor is that today there are a number of very efficient cleaning products that are also environmentally safe. Not only do these products clean as effectively as, if not better than, older products, but they also don't expose T employees or T customers to harmful toxins.

One technologically advanced system, which the T began testing in November, creates a sanitizer that kills bacteria and viruses on contact by combining water with salt and applying a small electrical charge. This method takes five minutes to sanitize a bus and kill any contaminant on any surface or vent, with remarkable results.

The week before Thanksgiving, Ryan began testing the new process on 75 buses at the Fellsway Garage.

"So far, we have completed close to 800 buses," Ryan said. "We have 1,060 in the fleet. The hope is to add disinfecting to the cleaning process and to continue to examine products and procedures that are environmentally responsible and are also effective. Our work with TURI has made this possible."

Photo above: A. Philip Randolph statue at Back Bay Station. Read story on pg. 2.

IN THIS ISSUE