GREEN SEAL™ PROPOSED ENVIRONMENTAL STANDARD FOR RESTAURANTS AND FOOD SERVICE OPERATIONS (GS-46)

BACKGROUND DOCUMENT

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THE MARK OF ENVIRONMENTAL RESPONSIBILITY

Green Seal, Inc. • 1001 Connecticut Ave., NW, Suite 827 • Washington, DC 20036-5525 •
(202) 872-6400 • Fax (202) 872-4324 www.greenseal.org

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This, and the corresponding proposed standard, were prepared with the input of many experts in the food service industry. The following individuals contributed substantially by serving on the Technical Advisory Subcommittee for this standard:

Cheryl Baldwin, Green Seal
Andrew Beauchamp, Green Seal
Gwen Dobbs, ICF International
Carrie Langford, The Rosenthal Group
Dan Rosenthal, The Rosenthal Group
Andrew Shakman, LeanPath, Inc.
Christopher Stemen, ARAMARK
John Turenne, Sustainable Food Systems

Green Seal Proposed Environmental Standard for Restaurants and Food Service Operations (GS-46) Background Document

Introduction

The development of this standard for restaurants and food service operations is part of Green Seal's independent certification program guided by the ISO 14020/14024 standards. This standard takes into account the life-cycle of restaurants and food service operations and includes multi-attribute criteria. The standard development process involves several steps, including comment periods for stakeholders. This background document provides information about the criteria in the proposed standard. The standard is not final, rather being proposed to get input from stakeholders to help in the development of a draft final standard. Later, when the standard has completed development and issued, it will be available for Green Seal certification. Certification, following the ISO protocol, includes on-site auditing and annual monitoring to ensure compliance to the standard and checks to make sure there are no outstanding violations or penalties from food, occupational, or environmental and other relevant regulatory bodies.

Overview of the Green Seal certification process once the standard is issued:

1) Application process
2) Technical staff evaluation
3) On-site audit, and any follow-up action
4) Continuous improvement
5) Annual monitoring

Standard Scope

This standard establishes environmental requirements for restaurants and food service operations where their primary business is preparing and serving food to the public or private consumers. This includes full-service, limited-service (e.g. fast-food, quick-casual), non-commercial, and catering operations. Lodging property, airplane, train, and boat food services are included in this standard, under the category of non-commercial operations that includes other establishments where meals and snacks are prepared/served as an adjunct, supportive service to the primary purpose of the establishment. Other non-commercial establishments include schools, colleges, universities, military, hospitality, hospitals, continuous care facilities, and penal facilities. This standard does not include bars, vending, or retailing operations such as grocery or convenience stores since they are not serving food as their primary business. All operations covered in the standard are included in each criterion, except when specifically noted. Some criteria state "where applies" and are not required when the criterion is not under the control of the operation such as when the operation runs in a leased or rented facility.

The standard does not include aspects covered by regulatory bodies, such as food safety or worker hygiene. Further, this standard aims to not conflict with such regulations.

The focus of the standard is on the operational consideration of restaurants and food service

operations. As a result, aspects of the operation's building construction, envelope, or major renovation are not included. These aspects are commonly not in control by the operation itself since many operations lease or rent the building their business is operated in. Further, these building aspects would be covered in the corresponding United States Green Building Council Leadership in Energy and Environmental Design (LEED) program.

The standard is written with three different levels of achievement – bronze, silver, and gold. The entry level contains the core requirements that must be met by an operation striving for leadership in sustainability. This entry level, on which the other two levels build, makes attainment of this certification more feasible for operations. Continuous improvement is required, thus operations certified at the entry level must move to the next level within three years of initial certification. The highest level of achievement, gold, is intended to only be achievable by a small niche of operations and indicate the direction sustainable practices are heading. However, gold certification is not intended to exclude achievement based on ownership type. So, various options to meet the requirements are included in the standard. Each subsequent level assumes the requirements for the previous level in addition to the requirements outlined for its own level. So, silver includes bronze and silver requirements and gold includes bronze, silver, and gold requirements. Where there may be overlap in requirements, the stricter requirement is applied.

From this point, the term *food* will be used in this document and the standard to represent food, beverages, and alcohol.

The main components of the proposed standard are:

- Sustainable food
- Energy management and conservation
- Water consumption and management
- Air quality
- Waste reduction and management
- Cleaning and landscape management
- Environmentally and socially sensitive purchasing
- Organizational commitment
- Additional requirements for gold achievement

Food

Life cycle assessment (LCA) research conducted by Green Seal on a range of food service operations (unpublished data) demonstrated that the biggest contributor to the operation's environmental impact was food. This is due in part to food being the largest purchase of an operation and also because food production itself has a significant environmental impact. While food purchases can be categorized as indirect effects of the operation, they are significant. As a result, responsible food service operation must consider and make efforts to decrease the impact associated with its food purchases, including buying sustainable food and effectively managing the waste associated with the food (e.g. reducing wasted food, composting).

Food contributes between 17 and 32% of all global human-induced greenhouse gas (GHG) emissions (Bellarby et al. 2008). However, greenhouse gas emission are just one of many major

environmental and ethical issues associated with food; others include water use, biodiversity, other forms of air, soil and water pollution, animal welfare, international development and food security (Garnett 2008). For example, the United States Environmental Protection Agency (EPA 1998) estimated that 70% of river and stream pollution is caused by agriculture from chemicals, silt, and animal waste. Further, agriculture is the largest user of water worldwide and only 45% of the irrigation water is effectively used (FAO 1995). Thus, agriculture reduces the amount of water that is available, and suitable, for other uses (Horrigan et al 2002). Chemicals commonly used in agriculture include pesticides, herbicides, and fertilizers. Many pesticides have been linked to causing cancer and having endocrine disruptor activity (Horrigan et al 2002). The two most commonly applied herbicides in the United States are suspected endocrine disruptors (Horrigan et al 2002). Fertilizers have been used excessively and contributing the most GHG (nitrous oxide) in agriculture (Bellarby et al. 2008).

The environmental impacts of different food choices vary. For example, the production of field crops generally produces less GHG emissions and requires less energy (from fossil fuels) than animal products (LCA Food Database). This is due to the low animal feed conversion rate and the feed impacts themselves (Pimentel and Williamson 2008). However, feed impacts can be reduced with more sustainable options, such as pasture feeding or organic feed (Cederberg 2003). For example, it has been shown that beef production on organic pasture requires half as much energy as conventional practices (Pimentel 2006). Further, free-range grazing can have a positive impact on the ecosystem, such as increased biodiversity on the grazed land (Horrigan et al 2002). Thus, more sustainable options are available for animal-based food products. However, it has been shown that produce can have as high an impact as animal products when grown in high intensity operations, such as hot houses (LCA Food Database). Thus, plant-based food isn't necessarily better than animal-based food for the environment. The primary focus should be on more responsible (often called sustainable) agricultural production practices.

Additional impacts to consider are the social aspects of food production. Consolidation of farms has led to a concentration of wealth, reductions in rural population, loss of infrastructure in farming communities, and greater environmental degradation (Shelke et al in press). It has been estimated that between 1910 and 1990, the share of the United States agricultural economy going to farmers declined from 41% to 9%, while the marketing and farm input industries' shares increased by similar amounts (Madden and Chaplowe 1997). Small farms generally are more diversified than large, industrial farms, providing for more nutritionally dense foods and using more environmentally preferable production methods (Shelke et al. in press). However, small farms generally cannot afford certification to validate their environmentally preferable production methods. As a result, many consumers have been making efforts to purchase foods "locally" or directly from the producer through farmers markets or Community Supported Agriculture (CSA).

Often, the industrialized farming practices that produce poultry, swine, beef, and farmed fish routinely use antibiotics as growth promoters rather than to treat identified disease (Horrigan et al 2002). The Worldwatch Institute (2004) estimates that 70% of the antibiotics used in the United States are used for livestock. The practice of feeding antibiotics to healthy animals promotes antibiotic resistance in bacteria that cause human infections (GGHC 2007). Industrial farming practices also increasingly crowd animals in indoor facilities with detrimental effects

(Horrigan et al 2002). Such practices have shown to increase aggressive behavior in animals (DeGrazia 1996) and increase illness, injury, and deformity (Singer 1990). The Green Guide for Health Care (GGHC 2007) recommends a procurement policy for meat and dairy products from animals that were humanely-treated and not subject to antibiotics (excluding antibiotics for therapeutic use). In addition, such operations have impacts on the environment surrounding them. For example, the animal waste runoff can contaminate groundwater with pollutants such as nutrients (e.g., nitrogen, phosphorous), organic matter, sediments, pathogens (e.g.,bacteria, viruses), heavy metals, hormones, antibiotics, and ammonia (Davies and Konisky 2000). According to a report by the United States Government Accountability Office (GAO 2008), there are a number of government-sponsored and peer-reviewed studies that have directly linked air and water pollutants from animal waste from concentrated feeding operations to specific health and environmental impacts. As a result, when animal-based foods are purchased they should be from humanely-treated animal in addition to less-intensive feed sources.

As noted above, animal based foods generally have greater environmental impacts than plant-based foods, especially when focusing on energy and GHG emissions. Bon Appétit, a United States food service provider, evaluated their sourcing from a life cycle perspective and defined several steps to reduce their impact; leading among them was reducing the use of beef by 25% after learning that livestock production was responsible for 18% of greenhouse gas emissions. To further this aim, reducing the total environmental impact of food choices, providing vegetarian or vegan options could be done at food service operations.

The technology of genetically engineering/transgenic crops is widespread in the United States. However, there are questions about its safety for humans and the environment (Horrigan 2002) and its potential to provide for advances toward more sustainable production (e.g. through less irrigation and less reliance on chemicals). Genetically engineered/transgenic crops are not explicitly included in any requirements of the proposed standard (e.g. prohibited, labelled, or otherwise). The topic is integrated into the proposed standard only by means of the certification programs that address it (e.g. Organic).

Due to the environmental and social issues noted above, sustainable food purchases are the primary action a food service operation can take to be more responsible. There are recognized programs to help in the identification of more sustainable food options. The credible programs are third-party certification programs run by independent organizations, with transparent requirements, and unbiased verification (Consumers Union). The absence of certification does not necessarily mean that the food does not meet the standards or are not sustainable but it is not verified. This standard recognized the following programs as sources of sustainable food.

The United States Department of Agriculture (USDA) National Organic Program is the most well-known certification program for food products. Consumer demand for organic products has been growing at significant rates for several years. For example, organic sales in the United States are expected to double between 2007 and 2011, reaching $35 billion and around $65 billion globally (Molyneaux 2007). Products claiming to be organic must meet the federal organic standards and be certified by a USDA-approved verifier. Organic foods cannot be grown using synthetic fertilizers, chemicals, or sewage sludge; cannot be genetically modified; and cannot be irradiated. Organic meat and poultry must be fed only organically-grown feed (without

any animal byproducts) and cannot be treated with hormones or antibiotics. In order to bear the USDA "Certified Organic" seal, a product must contain 95 to 100 percent organic ingredients. There is a range of products certified organic and availability is widespread. www.ams.usda.gov/NOP/indexNet.htm

Food Alliance is a nonprofit organization that operates a third-party certification program for socially and environmentally responsible agricultural practices in the United States. Food Alliance certifies farms and ranches for safe and fair working conditions, healthy and humane treatment of animals, reduction of pesticide use and toxicity (through integrated pest management, soil and water conservation, and protection of wildlife habitat). Food Alliance specifically prohibits the use of certain high toxicity pesticides, the use of sewage as a fertilizer, hormone treatments, non-therapeutic antibiotics, the feeding of animal by-products, and genetically modified crops or livestock. Food Alliance certifies food processors and distributors for safe and fair working conditions, conservation of energy and water, reduction and recycling of waste, and reduction of toxic or hazardous materials used in the facility. Food Alliance specifically prohibits the use of artificial colors, flavors or preservatives, and irradiation of foods. They certify beef, lamb, pork, dairy products, mushrooms, legumes, wheat, and a wide variety of fruits and vegetables (including frozen and canned), dried beans and lentils, butter and cheeses, wine, flour, baked goods and other products. www.foodalliance.org

The Rainforest Alliance is also a non-profit, third-party certifier of farms. The Rainforest Alliance certifies farms in the tropical regions of the globe that help to conserve the rainforest, treat workers fairly, effectively manage the soil and water quality, reduce waste and chemical use, and support local communities. The Rainforest Alliance Certified seal is found on coffee, cocoa, chocolate, bananas, orange juice, guava, pineapple, passion fruit, plantains, macadamia nuts and other tropical products. www.rainforest-alliance.org/index.cfm

Protected Harvest is a non-profit organization that independently certifies farmers for ecologically based practices. It is primarily an integrated pest management recognition program and currently certified products are limited to potatoes. www.protectedharvest.org

Marine Stewardship Council is an international organization that certifies fishing and fishery operations that implements environmentally responsible practices to minimally impact the ecosystem and prevent overexploitation of resources. A range of fish and seafood products are certified including tuna, salmon, crab, and scallops. www.msc.org

Fair Trade standards aim to ensure that farmers in developing nations receive a fair price for their product, and have direct trade relations with buyers and access to credit. They encourage sustainable farming practices, and discourage the use of child labor and certain pesticides. Fair Trade Certified products include coffee, hot chocolate, tea, candy, chocolate, sweeteners, fruit, rice and grains. TransFair USA is the third-party certifier of Fair Trade goods in the US. It is one of twenty members of Fairtrade Labeling Organizations International, the umbrella organization that sets the certification standards. www.transfairusa.org

UTZ has been compared to Fairtrade. UTZ has a Code of Conduct that gives independent assurance of sustainable production and sourcing by evaluating record-keeping, minimized and

documented use of agrochemicals for crop protection, protection of labor rights, access to health care and education for employees and their families, and on-line traceability of agricultural products back to their origin. UTZ has been focused on coffee but is expanding to palm oil, tea, and cocoa. http://www.utzcertified.org/

Animal welfare can be certified as "Humane Raised and Handled" through Humane Farm Animal Care's *Animal Care Standards* which require that animals have ample space, shelter and gentle handling to limit stress. The standard prohibits the use of growth hormones, requires the animals to be free to move and not be confined by cages, crates or tie stalls. Animals must have access to clean and sufficient food and water, sufficient protection from weather elements and their environment must not be dangerous to their health. In addition, farmers and ranchers must comply with food safety and environmental regulations and the animal caretakers be thoroughly trained, skilled and competent in animal husbandry and welfare, and have good working knowledge of their system and the livestock in their care. Products certified include beef, lamb, veal, wool, pork, turkey, poultry, eggs, goat cheese, milk, and butter. http://www.certifiedhumane.com/faq08.php

The Animal Welfare Approved program is aimed to ensure the integrity of sustainable, family farms and high animal welfare practices. The standards take into account all aspects of an animal's life, from appropriate genetics and opportunities to behave naturally to assurances of comfort and freedom from intensive confinement for beef cattle, dairy cattle, chickens, turkey, pigs, and sheep. http://www.animalwelfareapproved.org/

The availability of products from the above certification organizations vary. Certified organic products are generally the most widely available. There are some instances where specific foods have wide availability with many certification options, such as coffee with offerings that are Organic, Fair Trade, Rainforest Alliance, and UTZ certified. Sustainable products may be more expensive than their conventional counterparts due to differences in the means of production and marketing. Most organic fruits and vegetables are up to 30 percent more expensive than their conventionally grown counterparts. However, other product categories can be as much as double in price (New York Times). Yet, sustainable food choices don't always cost more. For example, the Leopold Center for Sustainable Agriculture found that food costs per pound of all foods purchased were lower for local foods at an average of $3.80 per pound compared to $4.30 per pound for products from national vendors. However, it has been shown that these purchases require more staff time for sourcing and receiving (Leopold Center).

Purchasing local foods may provide social benefits as noted above, namely support of local farm communities and economies. To derive such benefits however, direct-purchasing is necessary. This also has the benefit of a relationship being built between the purchaser and grower for more active participation in sustainable food production. The seasonality of local food provides freshness that chefs have been gravitating towards more and more. The combination of direct-purchasing and seasonal foods provides benefits, as Slow Foods states, "Understanding more about our food, how it tastes and where it comes from makes the act of eating all the more pleasurable." Locally produced food is most commonly considered as being that which is produced within 100 miles (Leopold Center). However, there are many parts of the United

States in which such a distance would not provide adequate variety. As a result, for those interested in a local or more seasonal menu, a 200 mile distance is appropriate.

It has also been thought that local purchases reduced the environmental impact associated with excessive transportation of food. However, when looking at distribution, distance isn't always a clear indicator of environmental impact. This is because modes of transportation differ in their efficiency (Leopold Center). Boat and train distribution is generally more efficient than trucks. Air transit of food is the least efficient option, and thus should not be used. Further, the number of trips or delivery vehicles makes a difference: there is efficiency in scale (Leopold Center).

This proposed standard includes aggressive requirements for sustainable food sourcing since it is the largest environmental impact of the operation. For a food service operation to make meaningful efforts to be more responsible, such food purchases must me made. However, since sourcing of such options may not yet be widespread due to low demand and the potential for increased costs to the operation, there are various levels of achievement in the standard for these requirements. Further, there are several options outlined for this sourcing, so an operation can choose which is most suitable for their menu and business. For the proposed Green Seal standard, the first level/bronze requirement begins with a 25% purchase level for sustainable food products (see Appendix A for a list of accepted sustainable food products). The subsequent levels have 50% and 80% purchase requirements. Separate requirements for animal product purchases are included, to guide such purchases toward more sustainable options.

The Nordic Swan ecolabel program requires restaurants in Denmark to have at least 10% organic food purchases. Purchases above this level or from local or Fair Trade receive additional credit points towards certification. Bon Appétit, through its Farm to Fork program, uses a minimum of 20% of foods sourced from within 150 miles (Sustainable Food News 2008). The United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) green building rating system for existing building's operation and maintenance (USGBC 2008) as well as the Green Guide for Health Care offers credit toward certification with 25% organic, local, or other sustainable food purchases. Finally, the Association for the Advancement of Sustainability in Higher Education (AASHE 2008) Sustainability Tracking, Assessment, and Rating System (STARS) program, outlines local food criteria with levels (different credit points awarded) for 5% of food purchases, 25%, and 50%.

Seafood

Monterey Bay has compiled the ecological status of fish and seafood commonly consumed. Reports on each of these fish include an evaluation on its sustainability considering its population status, vulnerability to fishing pressure, nature and extent of by-catch, effect on habitat, and management practices: http://www.montereybayaquarium.org/cr/SeafoodWatch/web/sfw_factsheet.aspx. The result of this research is a list of fish to avoid, with national and regional guides: http://www.mbayaq.org/cr/cr_seafoodwatch/sfw_alternatives.asp. An example of a fish on the “avoid” list is the once abundant and thriving Atlantic bluefin tuna whose population has declined by 99 % between 1963 and 2007, causing this overfished species to now be on the brink of extinction (Monterey Bay Aquarium). The Monterey Bay Aquarium list is readily available, regularly reviewed (at least every six months), and have documented rationale for its listing. However, there may be some (though very limited) situations where a fish species is listed to

"avoid" and a source is available that is certified by the Marine Stewardship Council (MSC). In that case, the certified source may be allowed if documentation demonstrates that that species is only purchased from MSC certified sources. While there are other lists (e.g. Shedd Aquarium Right Bite), a single list provides a more simplified tool for operations to reference. As a result, the Monterey Bay list will be referenced for fish and seafood prohibited from use in restaurants and food service operations.

This approach was recently taken by the Canadian pizza chain Panago Pizza. Panago has transitioned all seafood items on menus at more than 160 locations to make sure they are certified as sustainable (Sustainable Food New 2008b). The Vancouver-based company said the eco-friendly seafood choices will be designated on menus by the Ocean Wise logo. Ocean Wise is a Vancouver Aquarium conservation program that uses sustainable seafood assessments based on recommendations and research by groups such as the Monterey Bay Aquariums' Seafood Watch Program and Sea Choice Canada.

Evaluation of compliance to these food requirements will be verified by reviewing food purchases (invoices) from the most recent three months or normal operation conditions. The food costs will be the basis of determining compliance. The menu will be used to cross-check the purchase records. The menu should indicate which items include the sustainable options, mainly to provide a means of communication to the customer about the actions taken by the operation.

Energy:
Energy consumption is a direct impact of the operation on the environment. Food service operations comprise 7% of the all commercial building energy use in the United States (offices consume the most of all commercial buildings) and less than 1% of total energy used in the United States (DOE 2006). While this is a small share of total energy (and typically a small component of total operational costs), food service operations are the most intensive energy user in the commercial sector, in terms of BTUs per square foot (followed by health care and food retailing; DOE/EIA 2001). According to the Environmental Law and Policy Center, cooking equipment consumes the largest share of energy in most restaurants (35%). This is followed by heating and cooling systems (28%), dishwashing (18%), lighting (13%), and refrigeration (6%), all of which have the potential for reduced energy use. In addition, electricity costs have been steadily increasing for the last ten years (EIA 2007). As a result, energy conservation is an important practice and beneficial for sustainable operations.

Understanding current and past energy use is the best way to identify opportunities to improve energy performance and gain financial benefits. The ENERGY STAR program developed a tool, the Portfolio Manager, to facilitate this process. The Portfolio Manager helps track and assess energy (and water) consumption and cost within individual buildings as well as across a multiple buildings. The Portfolio Manager can then benchmark the building's energy performance, assess energy management goals over time, and identify strategic opportunities for savings and recognition opportunities. For example, the Portfolio Manager can be used to share data with the EPA to earn recognition for energy performance within a building. http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager#gain.

There are other similar energy management systems available that can be used to track, benchmark, and assess energy performance. The level and scope of data collection will vary from organization to organization. Some may choose to collect data from submeters on individual processes while others may only look at a utility bill. Even if an operation leases or rents its facility, access to the utility bill should be arranged. Otherwise, energy efficiency opportunities may be missed.

Once energy is monitored and benchmarked, areas for improvement can be identified and tracked. Utility companies often provide free auditing services to help with the identification of areas for improvement. If the utility company doesn't provide such a service, there are third-party energy auditors that can provide the service. The actions for energy conservation in a restaurant typically include 1) minimizing energy use, 2) maintaining equipment and energy systems, and 3) using energy-efficient equipment for each of the main energy-using systems: lighting, refrigeration, equipment, and indoor climate control. The EPA provides many best practices for each system for operations to consider in Putting Energy into Profits: ENERGY STAR Guide for Restaurants (EPA 2007). Such actions can save an operation significant expense (PACE 2006). The savings can also be extended by training employees to be conscience of their energy use.

Minimizing energy use

Minimizing energy use involves a little planning to ensure energy is used only when needed. Documenting the start-up and shut-down schedule is a starting point and a good reference for employees and training. Start-up should not include turning on all equipment. Instead, only the equipment needed should be turned on. When equipment is not in use, it should be turned off. This is especially important for items like holding cabinets, coffee pot warmers, toasters, steam tables, warmers, and heat lamps, since they are not typically continuously used nor are they typically under the exhaust hoods causing their waste heat production to heat up the kitchen (FSTC). This concept extends to lighting and heating, ventilation, and air conditioning (HVAC). The use of occupancy sensors and programmable timers can effectively automate this process. These sensors should be used at least in closets, storage rooms, break rooms, restrooms, and walk-in refrigerators. In addition, daylight dimmers can be used so that the light turns off automatically when daylight is sufficient. Further, there is opportunity to use equipment during lower energy cost periods, off-peak, like ice makers. Finally, there are a few simple solutions for walk-in coolers to conserve energy such as, installing strip curtains, automatic door closers or open door buzzers. It has been estimated that installing strip curtains alone, can reduce outside-air infiltration by 75% (EPA 2007).

Maintenance

Developing and implementing a monthly cleaning, inspection and maintenance program for all equipment in necessary. This is because well-maintained equipment reduces energy consumption and also can reduce accidents (Gregoire and Spears 2007). For example, refrigerators with dirty heat-transfer coils or misaligned ducts have reduced efficiency. This program should include calibrating ovens and checking pipes for leaks, cleaning lighting fixtures and lamps, replacing burnt out bulbs and lamps, cleaning and changing filters, replacing cracked or worn gaskets and strip curtains that allow air transmission in refrigerators, aligning refrigerator doors, checking HVAC for air leaks, clogs, and obstructions of air intake and vents,

keeping condenser coils free of dust and lint, and keeping the evaporator coils free of excess frost. Further, on refrigeration systems with remote condensers, suction lines should be insulated to reduce heat loss during the transport of the refrigerant from the evaporator to the compressor (EPA 2007). Similarly, hot water storage tanks should be insulated with a minimum of an R-13 blanket or have internal insulation of the same insulation value (blanket can be added to internally insulated tank).

Energy efficiency

Energy savings can also come from more efficient equipment and systems. For example, energy efficient reach-in refrigerators save and estimated 54% of energy, steamers 73%, and lighting 75% (EPA 2007). An energy-efficient option may have a higher initial cost, but due to its energy savings the return on the investment may be short and then result in a net savings (there are also rebate programs for such equipment - information about rebates on ENERGY STAR equipment at www.energystar.gov/cfsrebate_locator). The Food Service Technology Center (www.fishnick.com) has life cycle calculators that can be used to determine the costs over the lifetime of various equipment options. Using the calculator for electric fryers demonstrates that an ENERGY STAR model typically saves $100 a year from energy efficiency. Consideration of the product lifetime, multiplies this saving significantly. As a result, ENERGY STAR rated equipment usually provides a savings due to the energy efficiency and thus they should be purchased and used when possible. ENERGY STAR qualifies appliances like fryers, steamers, reach in refrigerators or freezers, ice machines, holding cabinets, and dishwashers. For other appliances, the Food Service Technology Center (www.fishnick.com) provides recommendations, especially for ovens. However, if an operation already has working equipment with many years of life left, it is likely better, financially, to keep it (ELPC).

Kitchen exhaust hoods are intended to capture and contain the grease and heat produced in the kitchen. When exhaust hoods are not working correctly extra heat ends up in the kitchen (FSTC). Maintenance and cleaning of the ducts and fans will help. The EPA recommends an air balance to ensure that the kitchen exhaust system is working effectively (EPA 2007). Other approaches to maximize exhaust efficiency include replacing directional, 4-way, make-up air diffusers with perforated diffusers, using a larger overhang hood, grouping heavy-duty appliances together, or adding side panels to the exhaust hoods (EPA 2007; FSTC). And where possible, consider the following additional measures: demand-based ventilation, a wall-mounted canopy instead of an island canopy hood, a proximity hood over light-duty appliances (griddles, fryers), group like-duty appliances under the hood, push equipment as far back under the hood as possible, keep make-up air delivered near the hood at low velocity, and use evaporative cooling and direct fired heaters on make-up air (FSTC).

It has been estimated that ENERGY STAR qualified heating and cooling commercial equipment uses 7-10% less energy than standard equipment (EPA 2007). Research indicates that energy use falls by 4-5% for every degree raised on the thermostat. Easing back on central cooling by only 3 degrees Fahrenheit could trim air conditioning costs by 12-15%. Using ceiling fans can also reduce air conditioning use and total energy use. A programmable thermostat can automate setback times when the facility is not being used.

Energy-efficient lighting can be used in all areas of the operation. Compact fluorescent lamps

(CFL) can be used in coolers, hoods, and restrooms. Low-wattage bulbs like light-emitting diodes (LEDs) can be used in exit signs. Efficient tubular lighting in the form of T8 or T5 lamps can be used in the kitchen (less efficient T12 are being phased out) and save 19 kWh per year (about $3) for each linear foot of lighting (FSTC).

Water

Water management is a growing concern. This includes water availability, water quality, and associated impacts. In 2006, the EPA developed a water conservation program, WaterSense, to help protect the future of the nation's water supply (www.epa.gov/watersense). In that program, it is noted that," It takes a considerable amount of energy to deliver and treat the water you use everyday. American public water supply and treatment facilities consume about 56 billion kilowatt-hours (kWh) per year—enough electricity to power more than 5 million homes for an entire year. For example, letting your faucet run for five minutes uses about as much energy as letting a 60-watt light bulb run for 14 hours."

In food service operations, water conservation efforts are similar to those outlined above for energy conservation. Water use also directly drives the energy use of appliances including the hot water heater and dishwasher. A water management plan with regular monitoring of water use and evaluation of performance shall be implemented. Specifically, conservation efforts should include minimizing water use, using water-efficient appliances and fixtures, and ensuring there are no water leaks.

Minimizing water use

Procedures that reduce water use should be documented and monitored. Such practices include turning off faucets not in use, regularly checking for and repairing all leaks, using signs in restrooms to encourage water conservation and to report leaks, not using running water to melt ice in sinks, hand-scraping dishes before loading into dishwashers, soaking dirty pots and pans instead of cleaning with running water or using a 1.6 gpm or less pre-rinse spray valve to spray dishes, operating dishwashers only when full, using dry floor cleaning methods before mopping, and using dry methods to clean outdoor hard surfaces and a water broom only when absolutely necessary. In addition, during water shortages in part of the United States (e.g. Georgia, California, North Carolina), restaurants are mandated to serve customers drinking water and refill drinking water only upon request.

Water efficiency

Water usage in food service operations is focused in the kitchen and restrooms. It has been estimated that restroom water use can range from 50 percent in full-service restaurants to 80 percent in fast food restaurants (DPPEA). Water-efficient restroom fixtures can include low-flow faucets and/or automatic turn-off faucets and low-flow toilets. In the kitchen, using a low-flow pre-rinse spray valve with a rating of 1.6 gallons per hour or less can save up to 60 gallons of water a day, with a savings of $300-350 a year (from water, sewer, and energy conservation) when used one hour a day (FSTC). In addition, water-efficient dishwashers reduce the energy requirement associated with heating the water.

The EPA now recognizes WaterSense faucets, toilets, and urinals that are at least 20% more water-efficient and perform as well as or better than conventional models. For example, the Energy Policy Act of 1992 established the maximum flush volume for all gravity tank-type, flushometer tank, and electromechanical hydraulic toilets at 1.6 gallons per flush (gpf). WasterSense toilets use 1.28 gpf. Faucets have a maximum flow rate of 1.5 gpm at an inlet pressure of 60 psi, from 2.2 gallons per minute, representing a 32% reduction.

Air

Smoking

According to the Surgeon General (DHHS 2006), there is no safe level of exposure to secondhand smoke. Further, establishing smoke-free environments is the only proven way to prevent exposure (DHHS 2006). As a result, states and local regulations have banned smoking in workplaces (including restaurants). The Americans for Nonsmokers' Rights estimates that smoking bans in the United States cover over 50% of Americans (ANR 2006). Given the significant health concerns with smoking, it will be prohibited in this standard. And based on LEED for existing buildings operation and maintenance, include the ban within 25 feet of the facility's entries, outdoor air intakes, or operable windows where regulations allow or where applies (USGBC 2008).

Charbroilers

Air emissions from restaurants significantly contribute to air pollution in the form of fine particle matter in the air (Rand and Scatena 2006). In a study conducted in New Jersey, it was found that the main source of these emissions is charbroiling equipment, namely under-fired charbroiling contributing 84% of particulate matter emitted from restaurants (Rand and Scatena 2006). Chain-driven charbroiling (like those used at Burger King) and griddles contribute, but to a lesser extent, 10 and 5%, respectively (Rand and Scatena 2006). Remediation for these emissions involves the addition of control devices like a catalytic oxidizer, self-cleaning ceramic filter, filter-bed filters, and thermal incineration (Rand and Scatena 2006). The cost of a catalytic oxidizer, including installation, was estimated to be $4700 (Rand and Scatena). Regulations are being developed and implemented to control these emissions in California and New Jersey. The Bay Area Quality Management District (www.baaqmd.gov) has a regulation soon to take effect that requires emission control devices for under-fire and chain-driven charbroilers. This guidance will be included for the higher levels of certification, given the capital investment required.

CFCs

Foodservice and food retail operations represent the largest commercial users of refrigeration, 23.6% and 39.0%, respectively (DOE 2006). Refrigeration requires chemical refrigerants to help with cooling. Chlorofluorocarbons (CFC) and other CFC-based refrigerants had been commonly used. CFCs, however, are known ozone-depleting substances and the United States Environmental Protection Agency (EPA) regulations issued under Sections 601-607 of the Clean Air Act have phased out the production and import of ozone-depleting substances (ODS), consistent with the schedule developed under the Montreal Protocol. However, many operations may have CFC refrigerants in older units. As a result, CFC-based refrigerants should be phased out. There are different options on how to phase-out CFC-based refrigerants including

retrofitting equipment for CFC-free compounds or replace equipment with CFC-free equipment (Mason 1996).The phase out plan should be in place and completed within three years of initial certification.

Waste

The three main streams of waste at food service operations are food (pre- and post-consumer), packaging, and operating supplies (LeanPath 2008). Food waste is generally the largest of the three streams (Davies and Konisky 2000). Fast-food and full-service restaurants have an average of 40-50% food waste (CIWMB 2006). Wasted food wastes of all the embedded inputs associated with the production, processing, transport and preparation of that food, and also has disposal impacts (Garnett 2008). Food waste can be reduced, reused, and recycled. Corrugated cardboard and paper are generally the most significant type of solid waste generated by food services (Davies and Konisky 2000). This packaging waste typically contributes between 34-50% of the total waste (CIWMB 2006). It can be reduced and recycled. As a result, nearly all the waste from a food operation could be diverted from the landfill.

Waste management follows the same principles as energy and water management. It begins with keeping track of waste produced, assessing the sources of waste and benchmarking, then identifying opportunities for reducing, reusing or recycling waste. Also similar to energy and water management practices, waste reduction measures can save the operation money. Waste reduction can provide savings through fewer food purchases, less labor, less energy, and lower disposal costs (LeanPath 2008).

Operators who continuously measure and track food waste maintain staff focus on waste control while developing actionable insights to minimize waste through menu, process, or policy changes. Food waste tracking records should be maintained. Tracking can then provide benchmarking for determining diversion rates and areas of achievement in reducing, reusing, or recycling waste. Diversion rates typical of food service are around 30-35%, and higher levels can be achieved (CIWMB 2006).

Food Waste

It has been estimated that 4-10% of purchased food becomes waste before ever reaching a guest (LeanPath 2008). Studies have shown that this waste is typically attributed to overproduction, trim waste, and expired food (Food Management 2007). This is often called pre-consumer waste. Pre-consumer food waste is food waste discarded by staff within the control of the food service operator. This includes all waste in the back of the house such as, overproduction, trim waste, expiration, spoilage, overcooked items, contaminated items, and dropped items. It also includes all waste in the front of the house that has remained under the control and custody of the food service operator, including items on cafeteria stations such as salad bars, steam wells, self-serve deli stations, misordered product (e.g. erroneous grill orders never served), and expired grab and go items. Leftover catering items would be pre-consumer waste if they remain on the catering line and have not been received by an individual customer. If an item has been sold or served to a customer and is then discarded it is no longer pre-consumer waste. Pre-consumer waste offers opportunities for waste reduction and cost savings. It is straightforward to source-segregate pre-consumer waste to support composting or donation for agricultural uses. Some

operations use color coded buckets or bags to collect this food waste.

Post-consumer food waste is food waste discarded by customers/guests/students/patients/visitors after the food has been sold or served. This waste is sometimes referred to as "plate waste" or "table scraps" and the decision to discard it (or leave the food on the plate) is made by the consumer rather than the food service operator. Post-consumer food waste can be reduced through smaller portions and awareness programs. Source-segregation of this waste is more difficult to control because customers play an important role in the process. However, post-consumer food waste may be source-segregated successfully through compartmentalized bins and clear labeling in certain environments, especially those with stable dining populations such as colleges and business dining facilities. For operations facing greater difficulty with source-segregation of post-consumer waste, they may implement table service to ensure correct segregation.

Reducing Food Waste

Forecasting, yield testing, and inventory management are examples of ways to reduce food waste. Most food service operators attempt to control overproduction waste by establishing forecasting systems designed to regulate the amount of food production and adjust it in accordance with expected demand. This is a standard practice; however, the manner in which the forecasting process occurs varies greatly. Some operators may follow instinct while others utilize complex automation software (food production software) to track historical production levels and predict future demand. Forecasting best practices include maintenance of 1) written recipes, 2) written menus 3) written daily production sheets and 4) recording of actual production levels and number of portions leftover after a specific meal period. By forecasting more carefully, operators reduce waste by preparing the appropriate amount of food or menu items for a specific season, event, or guest profile. This can be verified by examining operating procedures and confirming presence of written recipes, written menus, and historical written production records showing amount to be produced, amount produced, and amount leftover.

Batch production can be used to avoid producing excessive food. This means that food is produced in smaller quantities on a somewhat “as-needed” basis rather than producing a large quantity to meet total anticipated usage at the beginning of the day, meal period, or event. Not all food items, however, lend themselves to batch cooking due to food safety or culinary methods.

Food service operators elect to purchase produce and meat at various stages of processing. For those operators purchasing and processing fresh meat and produce there will be trim waste. These operations should attempt to control yields on this product by monitoring via periodic yield tests. They shoul work with staff to control excessive trim waste through training about proper trimming practices. This will be verified by reviewing written records of yield tests and confirming presence of training materials on proper trimming methods.

Inventory management is done to minimize spoilage. It typically involves monitoring of perishables, utilizing a FIFO (first-in, first-out) inventory rotation. Spoilage issues will often be discussed with vendors to ensure product is arriving at the correct stage of ripeness and achieving shelf-life expectations. FIFO rotation and vendor monitoring are standard practices. This can be verified with operation procedure documentation and auditing of practices. In

addition, pre-defined alternate uses for specific commodities and prepared items can permit safe and consistent reuse of food stocks in the event of overproduction or over-purchasing. Rather than improvising when overproduction occurs, its better to have a plan developed to guide staff toward appropriate and safe reuse options.

Operators have an opportunity to minimize waste by reducing the volume of food on display in buffet, grab-and-go and deli-case settings. This is because food is often merchandised inefficiently, with the amount of food reflecting standard production batch sizes (i.e. a full hotel pan) rather than the amount needed to meet customer demand at a given point in time. There is also a belief that abundance drives sales higher. However, in these situations, food can be artfully arranged to reduce perishable inventory while presenting a strong customer experience. Similarly, buffet lines can change service ware as customer traffic decreases, for example moving from a 6" full hotel pan to 2" reduces food waste toward the end of a meal period. Transitioning from a full pan to a half pan and covering the unused portion of the steam well with a tile insert can reduce merchandising waste while presenting a favorable customer experience. Box lunches also represent an opportunity. Moving to a build-your-own box lunch in a conference center environment can reduce the number of boxes discarded and the amount of food prepared.

Operators that remove trays from standard use in "all-you-care-to-eat" cafes/buffets tend to reduce total food consumption and post-consumer waste. This is because guests are not able to stack excessive volumes of food on a single tray with one pass through the café. Instead, they may carry only as much food as they can fit on a plate or in two hands. This leads to less accumulation of food at the beginning of a meal period and ensures that when a guest returns to the café for seconds they are likely to actually eat those items rather than leaving them on the tray. This approach leads to less post-consumer waste, less total food consumption, and lower food costs. It is especially applicable to colleges, grill-buffets, and cruise ships. Some operators consider trayless an undesirable approach due to the risk of customer complaints and because it imposes behavior change on guests rather than encouraging guests to independently make good decisions. Nonetheless, the practice is sufficiently compelling and effective to quickly overcome customer complaints thereby making it a leadership practice. (Example: USA Today: http://www.usatoday.com/money/industries/food/2008-07-22-trays-college-cafeterias_N.htm)

Reusing Food Waste

Reusing of food can safely be done in one main way, food donations. Operators may donate surplus safe and edible food to a non-profit charity or agency. The California Integrated Management Board (CIWMB 2008) states that "Donating surplus food inventory to food banks can be safe, efficient, and cost-effective. It reduces warehouse storage and disposal costs, and your local food bank can pick up donations free of charge. Gifts to food banks are covered by a number of liability protections, including national Good Samaritan laws (see below). Donations can also generate tax benefits for businesses." Operators should maintain a written donation policy that defines what food will be donated, how the donation decision will be made, and how the food will be handled to ensure food safety. Operators should also track all donations and maintain written records. Donations may be covered under the United States Food Donation Act, Public Law 104-210, (http://www.usdoj.gov/olc/bressman.htm). It establishes a national law to protect organizations and individuals when they donate food in good faith.

Recycling Food Waste

Recycling of food waste can be done by composting. Fats, oils, and grease can be recycled in a separate stream since they can be converted into biofuel, to replace petroleum-based fuels. Composting is the process of enabling aerobic biological breakdown of food. Most food items are compostable in that they are capable of undergoing biological decomposition in a compost site as part of an available program, such that the material is not visually distinguishable and breaks down to carbon dioxide, water, inorganic compounds, and biomass, at a rate consistent with known compostable materials. Composting typically involves aerobic digestion processes (created through various methods to turn or aerate the compost) designed to minimize methane production and, in some cases, capture biogases. Composting food waste is preferable to landfilling because food waste in landfills breaks down anaerobically, creating methane gas which may escape into the atmosphere if not captured. Methane is a greenhouse gas which is over 20 times more potent than carbon dioxide. Composting, on the other hand, recovers the carbon and other nutrients in the food, which can be returned to the earth as a useful soil amendment (that may be used to displace use of some petroleum-based fertilizers).

Composting may occur on-site, where waste is composted at the food service operation using specialized space or equipment or off-site through an "organics collection program" whereby waste is hauled to a third-party composter. Off-site commercial composting facilities are not yet available in many areas of the United States, creating challenges for operators who want to source-segregate and compost off-site. On-site composting options range from managing a compost pile and turning it occasionally to establishing a vermiculture system. Other similar approaches may include digesters or dehydrators. These provide rapid, on-site conversion of food waste into soil amendments or liquefied solids. This equipment is new and its full environmental, energy and carbon impact, including GHG emissions, must be researched before proceeding. On-site composting, however, may be limited by local regulations. Research must be done by the operation to identify potential composting services. When composting is available, significant waste can be diverted and resources recovered. An alternative to composting, when not available, would be to send the compost to a farm for use. Sorting is a key component of the success of a composting program. As a result, clear systems for sorting (color coded bins) and education is necessary.

When composting is not available, waste pulping should be practiced as an alternative (it can also be practiced in combination with composting). Waste pulping reduces total waste volume and costs and can be done through the use of commercial waste pulping equipment. A Hobart system claims to reduce waste volume by 88% (Hobart 2006). There are other manufacturers that provide similar equipment (e.g., Somat, InSinkErator).

Oil recycling has become widely available. Such recycling can be done with oil used for or generated by cooking and has not been mixed with water. It is typically generated from pots, pans, grills, and deep fat fryers and comes from butter, lard, vegetable fats and oils, meats, nuts, and cereals. Recycling oil began with using for it for rendering. The latest use of used-oil is converting it to biodiesel. This approach utilizes the oil as a feedstock typically in a local, domestic context rather than alternatives which sometimes involve shipping rendered product overseas. Because fats coat, congeal, and accumulate on pipes and pumps and sometimes

obstruct sewer lines, some food service establishments may be required by their local government to maintain grease traps (DPPEA).

Solid Waste Reduction

Solid waste, including packaging, can be reduced by a number of means. Disposable products should be replaced with durable, reusable items. For example, full-service operations do not need to use disposable or single-use utensils or serving ware, including napkins, except for take-out food. Recyclable or certified compostable products (e.g., certified by the Biodegradable Products Institute (http://bpiworld.org) can be used when disposable items are necessary (take-out utensils, serving ware, table ware and plastic bags). Wasteful portioning of disposable items should be controlled by staff or with single-serve dispensers. Finally, unnecessary items should not be used, such as non-edible garnishes (e.g. doilies, frilled toothpicks) and tray liners. This also includes full-service operations not serving non-alcoholic beverages in cans or bottles.

Corrugated cardboard is primarily used as secondary or tertiary packaging (packaging used to bring the product to the food service operation), thus discussing options to reduce the amount of packaging with vendors could decrease total waste at an operation.

Solid Waste Reuse

Operations that transport food off-site, like caterers should use reusable transport packaging instead of one-time (or limited-use). Some catering events, however, involve drop-off systems to reduce transportation and staffing. These events should use packaging that can be disposed of most effectively at the event site. For example, using recyclable and compostable products, when they are correctly sorted at the site, can reduce the total waste associated with that drop-off. For take-out food, operations have used take-back programs and reusable container programs to minimize packaging.

Solid Waste Recycling

Recyclable material constitutes a large portion of the total waste produced in a food service operation. The California Integrated Waste Management Board (CIWMB 2006) conducted a study on the type of waste produced by food service operations. Recyclable material was found to be mostly cardboard from packaging (25-30% of total waste), and some glass (2-3% of total waste) and plastic (1% of total waste) (CIWMB 2006). They noted that there was opportunity to recycle more material. Each operation should have a recycling program including clearly marked sorting mechanisms (e.g. bins) in areas waste is collected. In addition to packaging waste, universal waste should be collected for recycling locally, such as batteries, fluorescent bulbs, computers, computer monitors, and other electronic devices.

Polystyrene is not recyclable. It also has environmental concerns related to its production/material base (including benzene which EPA has classified as a carcinogen and ozone-depleting chlorofluorocarbons) and there are concerns about its contribution to the solid waste stream (Davies and Konisky 2000). As a result, many municipalities have banned the use of polystyrene in food service operations.

Evaluation of compliance with the practices for waste reduction, reuse, and recycling includes review of documented policies, on-site evaluation of practices, and review of waste records.

Additional Operational Considerations

Cleaning and Landscape Management

Good housekeeping keeps the work environment safe and efficient by allowing for easier spotting of leaks and spills. Further, proper cleaning and sanitation is essential for food safety. Food-contact cleaning and sanitation is covered by local regulations, and thus will not be covered in this standard (FDA 2005). However, non-food-contact surface cleaning will be addressed. Many cleaning products contain chemicals that are not safe for the environment or human health. As a result, environmentally preferable cleaning products should be used. This includes using restroom hand cleaners (for customer restrooms) that are not be antibacterial and dilution control systems to minimize chemical use when possible. In addition, durable, reusable cloths and mops should be used to minimize waste associated with paper towels. There are many high-performing cleaning cloths and mops now available such as microfiber and fine-cell structured materials -- standard cotton may not be the most effective tool for cleaning. Cleaning tools for restroom cleaning should be separate from those used for other areas of the operation, to prevent any possible contamination.

Care of plants and pests for interior and exterior space should use Integrated Pest Management (IPM). The use of the least-toxic chemical pesticides and minimizing the use of chemicals reduces the environmental and health risks associated with such materials. Environmental protection can be extended by using plants and trees tolerant of the climate, soils and natural water availability. Any watering of the landscape should only be done where necessary and in the early morning or at night to minimize evaporation. Soaker hoses mulching help plant beds retain water. Grasses that require irrigation should be limited to areas where direct business activities take place, if needed at all.

Environmentally and Socially Sensitive Purchasing

The commitment and culture of environmentally and socially responsible practices should be extended throughout the organization to be most successful. To help implement this, the operation shall establish an environmentally and socially sensitive purchasing policy, which includes the following:

- Incorporation of environmental preferences into purchasing documents and discussions with suppliers and vendors.
- Consideration of the life-cycle costs of environmentally responsible products and services. Information from all available sources shall be used, including manufacturer information and third-party certifications.
- Testing of potential environmentally responsible products and services.

The proposed standard includes specific preferences for food preparation products, paper products, office electronics, furniture and interior decor, and linens and uniforms. Environmentally preferable options for these categories are included in other leadership programs such as LEED, AASHE, GGHC and the Federal Comprehensive Procurement Guidelines (http://www.epa.gov/osw/conserve/tools/cpg/index.htm). And as a result, these products are widely available.

The benefits of purchasing these products include source reduction, fewer toxic chemicals, lower

volatile organic chemicals, lower emissions, and reduced human health impacts. For example, sanitary paper with 100% recovered content saves an estimated 4,100 kWh of energy, 7,000 gallons of water, 60 pounds of air pollutants, and 3.5 tons of virgin wood per ton of recycled paper. Furthermore, many bathroom paper products are bleached with chlorine or chlorine derivatives in order to obtain the white color. As a result of this bleaching process, powerful carcinogens and mutagens, such as dioxins and furans, are released into the environment. These bio-accumulative compounds adversely affect immune systems and reproductive systems and are harmful to aquatic life and wildlife.

For laundry care, perchloroethylene (perc) is the primary solvent used in dry cleaning services, but long-term exposure can lead to neurological dysfunction, impaired liver and kidney function, reproductive disorders, and respiratory disease. Additionally, California Prop 65 lists perc as a known carcinogen and is listed as a hazardous air pollutant by the EPA and a toxic air contaminant by the California Resources Board. Perc has been identified as one of the six key toxic air contaminants in the California South Coast Air Basin, and as a result the SCAQMD has issued Rule 1402 and 1421, which establish a time line for phasing out the use of perc incrementally by 2020. New technology has allowed for “wet-cleaning” to be reincorporated into dry cleaning services. This technology controls the tumbling action, pH of the water, and the humidity during the drying process in order to ensure gentle action and prevent over drying, which contributes to clothing shrinkage. Wet-cleaning is the most environmentally preferable perc alternative and is recommended. Liquid CO_2 also presents an alternative technology to perc solvents.

Evaluation of environmentally and socially responsible purchases will be verified with the written policy that includes specification for the items included in the standard. Invoices and other proof of purchase will be checked along with on-site verification.

Organizational Commitment

Several aspects of organizational commitment are included in the proposed standard to ensure long-term effectiveness of the program and help support the other component of the standard. This begins with written commitment in the company charter, to formalize the efforts of the organization in a manner that transcends management or ownership. This action is then taken to the next level of the organization with an environmental and social responsibility plan that includes goals and an action plan related to the aspects of this standard and must be updated annually. This is where a vendor code of conduct should be included to ensure that suppliers are engaged in the operation's efforts to be more socially and environmentally responsible. There should be staff in the company with responsibility to oversee the program. Part of their responsibility includes documenting the operating procedures/creating an employee manual that covers all the aspects of the standard, along with other procedures integral to the operation (e.g., food safety, worker safety). These operating procedures can then be used to provide standardized training to all employees. The aspects of the plan and training should be reinforced in the company culture. This is typically effective with a recognition program for employees taking leadership in environmentally and socially responsible practices.

Outreach through communication and education to the community and customers takes the operation's actions downstream. The operation should post information about its environmentally

and socially responsible practices for customers to learn about what practices are in place and for what reason the practices are done. In addition, if the operation can extend its environmentally responsible practices beyond it's direct business and engage the community (volunteering or donations), an even larger audience can be reached with their actions in environmental responsibility.

The operation shall have an action plan for improving upon its environmental and social achievements. The action plan shall include at least five areas related to the items in this standard and be included in the company environmental and social responsibility plan. With Green Seal's annual monitoring, progress on this action plan must be demonstrated. For operations that get certified at the entry level (bronze) after a few years of continuous improvement they should be able to meet the next achievement level of certification. As a result, operations can only have a bronze certification for three years.

Additional Gold Requirements

Operations that meet the gold requirements are those demonstrating the very best sustainability practices feasible today. They are the elite, top 1% of the industry, and are leading the way for the rest of the industry. As a result, there are additional requirements, beyond those discussed above. An operation can select one of eight options including:

- Sustainable Building. The operation runs its direct business in a LEED certified building.
- Zero-Waste. The operation does not dispose of or incinerate at least 99% of its solid or water by-products from reduction, reuse, recycling, and composting activities.
- Alternative-Fueled Vehicles. Alternative-fueled vehicles are used for 100% of total miles traveled for direct business.
- Renewable Energy. The operation uses renewable energy for at least 25% of its direct energy needs, not including any renewable energy certificates; alternatively, the operation is a member of the Center for Resource Solutions' Green-e Marketplace.
- Greenhouse Gas Reduction. The operation achieves zero greenhouse gas emissions, with proven partnerships and/or through carbon offsets (e.g., Certified CarbonFund Carbon-Free Partner) and has an active program to reduce its carbon footprint through emissions reductions (by at least 5% annually), not including carbon offsets.
- Community Outreach and Development. The operation sponsors (creates and implements) an environmental program in the community that otherwise would not occur, related to the components in this standard, such as a community garden or a composting site.
- Innovative Resource Reduction. The operation utilizes unique or new technology or approaches to eliminate resource needs for aspects of the operation covered in this standard, such as a greywater recovery system for reuse or a heat/steam recovery for climate control or water heating.
- Seasonal Menu. The operation provides seasonal food options for 60% of the menu year-round, based on cost, and determined by purchases made within 200 miles of the operation.

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