

Valencia College Operations and Maintenance Green Guidelines

Section 1

- 1.0 Energy Consumption - This section establishes several basic guidelines for managing maintenance and operations programs at Valencia College. These guidelines are not intended to conflict with, but rather complement, existing policies, practices, and procedures that are already in place. The recommendations outlined in this document define parameters for a broad range of general administrative and managerial activities and responsibilities. The College will continue to review these guidelines on an annual basis in order to provide the most efficient and effective way to operate our campus while maintaining occupant comfort and maximizing the students learning environment.
- 1.1 HVAC Controls and Metering and Maintenance
 1. Building Controls – To the extent possible, all systems are controlled through Building Automation Systems (BAS). Individual occupant control through thermostats can be installed on a limited basis to provide occupants with the ability to adapt their individual environments. In these cases, thermostats shall not be located on an exterior wall, or near a copy machine and shall be regulated to allow for no more than a 2 degree shift from building occupancy temperatures.
 2. Metering - All new buildings will have sub-meters installed to measure electrical consumption and, if possible, chilled water consumption. Existing buildings shall be evaluated on a case by case basis. Meters shall be connected through the BAS.
 3. Carbon dioxide (CO₂) Sensors – All new buildings shall include CO₂ measurement devices. Devices will be used to regulate the introduction of outside air in “under-air” building zones and shall be set to override outdoor air flow beyond design ventilation rates if the CO₂ exceeds acceptable levels. (In addition, CO₂ sensors shall be used in combination with Demand Ventilation to reduce wasted “dumping” of conditioned air in part-time occupied spaces. Spaces shall include but not limited to conference rooms, auditorium spaces, mailrooms and closet spaces). Existing buildings shall be scheduled to receive CO₂ sensors as part of any HVAC upgrade for a 3% upgrade annually until established campus wide. CO₂ sensors are installed in most air-handling unit and connected to the BAS.
 4. CFCs - All new buildings shall utilize refrigerants that are classified as “Low Impact” (Low impact refrigerants shall have an ozone depletion rating of zero and a global warming potential of no more than 50). Existing buildings that utilize CFCs or other high impact refrigerants shall be phased out over a period of 10 years. Phase out plan shall target 10% each year until complete.
 5. Maintenance - Scheduling of staff HVAC maintenance shall be done through the College’s online MasterLink software. Regular inspections shall be done as follows and shall also be recorded via the MasterLink system.
 - 5.1. Air handling unit coils shall be inspected and scheduled for cleaning by HVAC maintenance staff at least once per year. Inspection shall include but not be limited to visual review of air flow (blocked vents), leaks, cleanliness (build up of dust and mildew) and temperature anomalies. All observations shall be logged using the Masterlink system. Additionally, the units shall be serviced by the Continuing Services Mechanical HVAC contractor. All information shall be logged and tracked utilizing the Masterlink software system.
 - 5.2. Filters – All new construction shall include filter sensors for monitoring air flow (see Section 2 1.4).

- 5.3. All Other Equipment – Annual maintenance shall be done on all other HVAC equipment in accordance with product manufacturers' maintenance requirements (see O & M manuals for requirements and reference).
- 5.4. Mechanical Rooms – Mechanical rooms are to be kept clean and free of material. No storage shall be allowed in mechanical spaces.
- 6. Cooling Towers - The campus central energy plant and cooling towers shall be serviced by the Continuing Services Mechanical HVAC contractor. All information shall be logged and tracked utilizing the Masterlink software system.
 - 6.1. Make up water shall be provided utilizing non-potable sources to the full extent possible (rain water and well water are preferable).
 - 6.2. For the water-cooled chillers on West, East, Osceola and Lake Nona Campuses, water is reused following zero bleed high cycles technology. Consequently it is not drained to either sewer or storm water drains. Where water drains from the chiller plant, the drainage pipes are accessible to check for blockages, leaks and mildew/algae growth.
- 2. Energy Efficient Operating Procedures
 - 2.1. Energy Education
 - 2.1.1. Keeping doors closed plays a huge part in maintaining energy efficiency within our buildings. Instruction room doors and windows shall remain closed during regular occupied hours. Doors between a conditioned space and a non-conditioned space shall remain closed at all times. Propping doors for deliveries and other reason should be strongly discouraged. All exterior windows and building doors shall not be left open during occupied hours.
 - 2.1.2. Computer Equipment – Computer equipment should be turned off when not in use. All printers, computers, projectors and other equipment should be powered off at the end of the day. This includes the monitor, local printer, and speakers. Network (i.e. LAN) equipment is excluded.
 - 2.1.3. All office machines (copy machines, laminating equipment, etc.) shall be switched off each night and during unoccupied times or set in the energy saving mode. Fax machines and networked printers may remain on.
 - 2.1.4. During the work day, all peripheral computer items should be left in the OFF position until needed. All computers shall be programmed for the “energy saver” mode using the power management feature. If network constraints restrict this, ensure PC monitors “sleep” after 10-minutes of inactivity.
 - 2.1.5. Those faculty and staff with other personal appliances in their offices, such as coffee pots, clocks, radios, are requested to turn these off or unplug them at night, during weekends and holidays. Valencia College faculty, staff, and contractors are asked to take personal responsibility for turning off and unplugging all appliances when not in use.
 - 2.1.6. Lights - All lights not controlled by occupancy sensors shall be shut off.
 - 2.2. Occupied temperatures and unoccupied temperature shall be as follows:
 - 2.2.1.1. Offices: Cooling - Occupied 74°, Unoccupied 85°, Relative Humidity 60%, Heating - Occupied 68°, Unoccupied 55°

- 2.2.1.2. Lobby & Common Spaces: Cooling - Occupied 74°, Unoccupied 85°, Relative Humidity 60%, Heating - Occupied 68°, Unoccupied 55°
- 2.2.1.3. Classrooms: Cooling - Occupied 74°, Unoccupied 85°, Relative Humidity 60%, Heating - Occupied 68°, Unoccupied 55°
- 2.2.1.4. Conference Rooms: Cooling - Occupied 74°, Unoccupied 85°, Relative Humidity 60%, Heating - Occupied 68°, Unoccupied 55°
- 2.2.1.5. Computer & Data Storage: Cooling - Occupied 74°, Unoccupied 80°, Relative Humidity 55%, Heating - Occupied 68°, Unoccupied 55°
- 2.3. Data processing and server rooms are to be conditioned to within 10% of the maximum recommended space temperature, as stated by the original equipment manufacturer. All new data centers located within the range of the central chilled water distribution loop shall have dedicated chilled water fan coil units to provide adequate space conditioning. If a new data center is not located within the chilled water loop, the space shall be conditioned utilizing a dedicated direct expansion unit without ventilation.
- 3. Water heating
 - 3.1. Hot water systems shall be set to 140°F. Cafeteria service (with dishwasher booster) can be set to 120°F.
 - 3.2. All domestic hot water re-circulating pumps are to be switched off during unoccupied times.
 - 3.2.1.1. For heat pumps, ensure a 6°F dead-band between heating and cooling modes.
- 4. Food Services Equipment, Ice-Machines and Water Dispensers
 - 4.1. All new installations and replacements shall be ENERGY STAR labeled (or equal to show enhanced energy efficiencies). Ice machines shall be air cooled. All existing equipment that is not energy efficient shall be phased out over the next 10 years.
- 5. Office Equipment, Computer Plug Loads, and Convenience Appliance Use
 - 5.1. Portable electric heaters and fans are discouraged in Valencia College facilities, unless specifically required by occupants because of medical conditions, failure of the building heating and/or air conditioning systems, or when building heating, ventilating or air conditioning systems cannot be used to regulate the minimum comfort levels within the provisions established by the indoor environmental condition requirements. Facilities should be notified through the work order system if the heating, ventilation, and air conditioning system is incapable of meeting the indoor environmental condition requirements listed above.
 - 5.2. Individual refrigerators are discouraged in Valencia College facilities. Refrigerators should be located in common areas. Refrigerators shall be Energy Star rated (or equal) to show enhanced energy efficiency. All existing equipment that is not energy efficient shall be phased out over the next 10 years.
- 6. Indoor Lighting
 - 6.1. The College uses natural lighting whenever possible.
 - 6.2. All indoor lighting scheduled for New Construction shall be fluorescent (T-8, T-5, CFLs) or LED type, unless an exemption is specifically authorized for particular low usage fixtures. Existing fixtures, lamps, ballasts and incandescent lamps for general-purpose lighting or any personal lamps not fluorescent (T-8, T-5, CFLs) or LED type will be phased out during a period of 10 years.

- 6.3. All existing building renovations shall utilize energy saving fixtures, lamps, and ballasts and will replace existing, less efficient lighting as part of the renovation wherever appropriate.
 - 6.4. In response to a problem or complaint, indoor lighting levels will be surveyed. Lighting levels will be reviewed in accordance with the Illumination Engineering Societies (IES) recommendation and will consider the nature of the tasks being performed in the work space. If required lighting levels will be adjusted by providing either task lighting or making a change to the lighting fixtures servicing the area involved. Lighting levels inside and outside the buildings will always be maintained at an appropriate level to provide a safe and secure environment.
 - 6.5. Staff and faculty are requested to refrain from turning lights on in spaces not being utilized.
 - 6.6. All lighting, except that required for security purposes, will be turned off when buildings are unoccupied, at the end of each workday. Whenever possible a control system should be utilized to provide regulation of interior and exterior lighting. Should manual lighting be in-place in the occupied area, faculty and staff are encouraged to make certain that lights are turned off when leaving an unoccupied instruction or office space.
 - 6.7. Occupancy sensors will be installed in all offices, classrooms, conference rooms and utility rooms to reduce and/or turn off lights in unoccupied areas. Adjustments and regulation of installed sensors shall be accomplished by work order.
 - 6.8. Task Lighting – When task lighting or personal lighting is utilized in a space, the use of energy efficient lighting is recommended. “Soft lighting” or “true color” can be achieved using LED’s and ~~several~~ some florescent options. The use of incandescent lighting on campus is strongly discouraged.
7. Outdoor Lighting
- 7.1. Outdoor lighting levels will always be maintained at an appropriate level in order to ensure security. Outdoor illumination will be (metal halide not recommended) LED, fluorescent, or induction type, with the efficacy of the lighting system being no less than 85 lumens per watt.
 - 7.2. Outdoor lighting shall be dark-sky compliant, as indicated by manufacturer. The minimum lighting level at the property line shall not exceed 1 foot candle (FC) unless required by code or security. Shielded fixtures shall be considered for all light trespass issues.
 - 7.3. Outside lighting shall be controlled by daylight sensors on all new construction. Existing buildings not on daylight sensors shall be phased out over a period of 3 years so that all exterior lighting is compliant by 2015. All outside lighting shall be regulated to turn off within 30 minutes after sunrise and turn on within 30 minutes prior to sunset.
 - 7.4. All inspections of outdoor lighting equipment will be done during normal operational hours (night-time).

Section 2

- 2.0 Air Quality - At Valencia College we recognize that good indoor air quality is essential to all our faculty, staff and student’s health and productivity. We have established an IAQ program to promote good indoor air quality in our buildings. These policies follow the requirements established by the NASBE (National Association of State Boards of Education) and the Board of Health and have been written to protect our building occupants and optimize the schools learning environment.

The objective of this policy is to reduce the levels of indoor air pollutants through preventive measures such as routine maintenance activities, periodic building evaluations and inspections. Provide and maintain adequate airflow by repairing and maintaining ventilation equipment, which will promote a comfortable and healthy learning and working environment. Respond to IAQ-related concerns and problems in a prompt and thorough manner, and effectively communicate the progress of investigations and their resolution to all interested parties.

1. Air Quality and the Prevention of Mold and Mildew; Air Filtration
 - 1.1. Bipolar ionization shall be considered for all new construction and retrofits. A Life cycle analysis shall be done and submitted for consideration if the study results in a pay back of no more than (usually 3-5 years).
 - 1.2. Indoor humidity shall be monitored by the BAS and maintained to levels no greater than 60 % relative humidity.
 - 1.3. Introduction of outside air shall be designed and operated in compliance with ASHRAE Standard 62.1 Guideline.
 - 1.4. Filters for air handler units shall be no less than MERV 8. MERV 14 filters shall be considered for all new applications. Existing buildings with filter media less than MERV 8 shall be phased out over a period of 5 years. Filter changes shall be monitored using sensors whenever possible and shall be regulated via the long life filter program. Filters shall be changed quarterly or as prompted by particulate count and pressure drop.
 - 1.5. Scheduled re-commissioning of the facilities is conducted to facilitate efficient and healthy building operations.
 - 1.6. All exhaust fans in Cafeterias and Cafe kitchens shall be vented to the outside and shall be located so that they prevent induction into any air handling unit's outside air louvers.
 - 1.7. All fans, vents, louvers and indoor grates throughout the facility shall be cleaned on a regular basis to eliminate the build-up of respiratory irritants. All kitchen exhaust fans shall be cleaned on a quarterly basis by an outside contractor. Cleaning shall be accomplished in strict accordance with the school green cleaning policy and shall include the appropriate PPE as well as ventilation of the space as needed.
 - 1.8. Signs of water intrusion and microbial growth should be investigated. All maintenance staff are instructed to watch for leaks, condensation and wet spots and report them to their supervisor immediately. Materials damaged by water should be replaced when possible. Damp or wet materials must be dried within 48 hours (preferably within 24 hours).
 - 1.9. Staff and Faculty should refrain from interfering with airflow from ventilators (e.g., do not stack books or other items on ventilators, cover vents with posters, or turn off the fan due to noise), remove clutter in their classrooms, properly dispose of hazardous waste, and enforce the school's various IAQ policies in their classrooms.
 - 1.10. All new construction, renovation, maintenance and/or repair projects shall use low VOC, latex, water-based paints. Painting and drying should only occur when the area of the building is unoccupied and properly ventilated. Notifications to inform all affected staff and students shall be given no less than 48 hours before a painting job begins.
 - 1.11. Food should not be left in classrooms. When it is necessary to store food in classrooms, it must be kept in airtight, sealed containers to minimize the potential for pests, odors, and biological growth.

- 1.12. Delivery and parking areas have been located away from building outdoor air intakes to ensure that exhaust fumes do not enter the facility. Construction projects, renovations, maintenance and repair activities shall prohibit idling when ever possible. Protective measures shall be taken at all outside air louvers to prevent transfer of irritants and exhaust fumes into occupied buildings.
 - 1.13. Cleaning staff and contractors shall limit the number of cleaning chemicals used in building; and they shall maintain a high level of cleanliness thus minimizing the presence of irritants.
 - 1.14. Maintenance activities that could produce high emissions (painting, roofing repair, pesticide applications) are scheduled to minimize occupant exposure to indoor air contaminants.
 - 1.15. Personnel will receive training in the prevention, recognition, and resolution of Indoor environmental quality concerns.
 - 1.16. Storage areas shall be kept free of odor or irritant causing products unless separately vented for such applications.
2. Tobacco smoke
 - 2.1. Valencia College has a smoke-free College policy. The policy applies to anyone who is on property and facilities owned, leased or operated by Valencia College, including all Valencia employees, students, visitors, contractors/vendors and others.
3. Green Housekeeping – All cleaning and housekeeping activities shall be provided in compliance with Green Seal standards whenever possible.
 - 3.1. Custodial staff is required to complete an initial training program as provided by the vendor on cleaning procedures and product use. Maintenance personnel receive training in the hazards of use, disposal and recycling of cleaning chemicals, dispensing equipment and packaging. One hour continuing annual education is required. The training program includes Material Safety Data Sheet information, verbal presentation, handouts, and correct hands on product usage demonstrations.

Valencia College Code enforcement staff will provide guidelines addressing the safe handling and storage of cleaning chemicals used in a building, including a plan for managing hazardous spills or mishandling incidents.
 - 3.2. The office of sustainability or other entity will collect occupant feedback for continuous improvement to and to evaluate new technologies, procedures and processes.
 - 3.3. Custodial staff shall only use cleaning agents approved by the district for school use. All products must be clearly labeled and stored in a secure area. Bottles of cleaning agents must be tightly closed when stored.
 - 3.4. All material safety data sheets should be stored in an area available to all staff, and the location of this information is discussed in the district's "Employee Right to Know" annual training.
 - 3.5. Rooms must be kept clean. Slightly damp cloths are used to remove dust from surfaces — however, wiped surfaces should not be left damp or wet for extended periods of time, since this can cause mold growth.
 - 3.6. Ammonia-based cleaning agents and chlorine-containing cleaners (such as bleach) must never be mixed because this generates toxic gases.
 - 3.7. During routine operations, pollutant-releasing activities are restricted by time of day, week, or year. For example, the waxing of floors will be performed [on Friday afternoons or vacations, to ensure that gases are removed by the time classes resume].
 - 3.8. Areas of frequent use should be cleaned more often than areas of infrequent use.

- 3.9. Large walk-off mats must be used to trap dirt and moisture at building entrances. These mats are cleaned according to manufacturers' guidelines to ensure optimal performance. Trapping dirt and moisture at building entrances helps to maintain the cleanliness of floors and carpets throughout the building.
- 3.10. Staff is not permitted to bring any cleaning products, pesticides, air fresheners, or other chemicals into the school.
4. Sustainable Cleaning Equipment
 - 4.1. Vacuum cleaners meet the requirements of the Carpet and Rug Institute "Green Label" Testing Program - Vacuum Cleaner Criteria and are capable of capturing 96% of particulates 0.3 microns in size and shall operate with a sound level less than 70 dBA.
 - 4.2. Carpet extraction equipment for restorative, deep cleaning will be certified by the Carpet and Rug Institute's "Seal of Approval" Testing Program for deep-cleaning extractors.
 - 4.3. Powered floor equipment - e.g., electric and battery-powered floor buffers and burnishers - are equipped with vacuums, guards and/or other devices for capturing fine particulates, and operates with a sound level less than 70dBA.
 - 4.4. Automated scrubbing machines are equipped with variable-speed feed pumps and onboard chemical metering to optimize the use of cleaning fluids. Alternatively, scrubbing machines use only tap water with no added cleaning products.
 - 4.5. Battery-powered equipment is equipped with environmentally preferable gel batteries.
 - 4.6. Powered equipment is ergonomically designed to minimize vibration, noise and user fatigue.
 - 4.7. Vendor cut sheets for all equipment used onsite shall be stored onsite, along with date of purchase.
5. Handling and Storage of Cleaning Chemicals
 - 5.1. In order to mitigate spills, leaks and mismanagement, protocols governing safe handling and storage of cleaning chemicals have been adopted.
 - 5.2. The cleaning chemical supplier is required to provide accurate MSDS for all chemicals delivered to the building. Integrating MSDS management with chemical inventory management can resolve many of the challenges involved in ensuring access to accurate data. MSDS are filed, in duplicate, in the chemical storage room and the maintenance manager's office in clearly labeled binders. Frequently used MSDS are posted in a common area for review when needed.
 - 5.3. The cleaning chemical supplier maintains a toll-free hotline that can be called in the event of a spill or accident to access safety data and protocols. This number is posted on the MSDS for that chemical.
 - 5.4. Cleaning chemicals are stored in a locked janitorial closet on each floor. Workers access chemicals at the beginning of their shift and as needed.
 - 5.5. Custodial closets shall be vented and exhausted separately.
6. Hard Floor and Carpet Maintenance
 - 6.1. To minimize chemical use, Valencia College has reduced the frequency of stripping or removing coatings and is able to maximize the floor's longevity, thereby conserving cleaning and floor restoration materials and minimizing occupants' exposure to harmful chemicals. Instead of harsh stripping chemicals, Nutricleaner is used to top scrub the thinner layer of wax applied. Several floors of buildings have been converted to a no-wax flooring material and others are being considered for this material.

- 6.2. A written floor maintenance plan is maintained, which details the number of coats of floor finish being applied as the base and other applications (top coat), along with all relevant maintenance/restoration practices. Dates of these activities are available in MasterLink.
- 6.3. Standard operating procedures for effective cleaning and hard floor and carpet maintenance will be consistently utilized, managed and audited are in place. These address cleaning methods to protect vulnerable building occupants. Cleaning procedures and training by vendors are being implemented.
7. Practices to Optimize Use of Chemical Concentrates and Dilution Systems
 - 7.1. Chemical dilution systems dispensers for sanitizers, window cleaners, floor cleaners, and peroxide for carpet or furniture cleaning are located in the custodial closets in each building. Spartan Chemical Green Solutions dilution systems are set by the vendor for a greater dilution rate than is stated on the MSDS in order to minimize the risk to staff and occupants and to conserve resources.
 - 7.2. Valencia College uses environmentally preferable cleaners whenever feasible. Traditional cleaners that contain nitrilotriacetic acid (NTA), chlorine bleach, phosphates, artificial dyes and imitation fragrances are limited in use.
 - 7.3. Product types subject to these requirements include, but are not limited to, bio-enzymatic cleaners, hard-floor cleaners, carpet cleaners, general-purpose cleaners, specialty cleaners, odor control, disinfectants, disposable custodial paper products and recycled trash bags and hand soaps.
 - 7.4. The cleaning products/chemical solutions provided and used are certified by Green Seal Standards Green Seal GS-37, for general-purpose, bathroom, glass and carpet cleaner use for industrial and institutional purposes
 - 7.4.1. Environmental Choice CCD-110, for cleaning and degreasing compounds
 - 7.4.2. Environmental Choice CCD-146, for hard-surface cleaners
 - 7.4.3. Environmental Choice CCD-148, for carpet and upholstery care.
 - 7.5. These standards require the following:
 - 7.5.1. The undiluted product shall not be toxic to humans.
 - 7.5.2. The undiluted product shall not be corrosive to the skin or eyes.
 - 7.5.3. The undiluted product shall not be a skin sensitizer.
 - 7.5.4. The undiluted product shall not be combustible.
 - 7.5.5. The product shall not contain substances that contribute significantly to the production of photo chemical smog, tropospheric ozone, or poor indoor air quality.
 - 7.5.6. The product shall not be toxic to aquatic life.
 - 7.5.7. Each organic ingredient in the products used shall exhibit ready biodegradability.
 - 7.5.8. The product as used shall not contain more than 0.5% by weight or total phosphorus.
 - 7.5.9. The primary packaging shall be recyclable or the manufacturer shall provide for returning and refilling of their packages.
 - 7.5.10. The product must be a concentrate.
 - 7.5.11. Manufacturers shall identify any fragrances on their MSD sheets. Any ingredient added to the product as a fragrance must follow guidelines as interpreted by the international fragrance association.
 - 7.5.12. The product shall not contain alkyl phenol ethoxylates, dibutyl phthalate heavy metals, ozone-depleting compounds or optical brighteners.

- 7.5.13. The product shall not be tested on animals.
- 7.6. Disinfectants, metal polish, floor finishes, strippers or other products not addressed by GS-37 or Environmental Choice CCD-110, 146, or 148 shall meet at least one of the following standards for the appropriate category:
 - 7.6.1. Green Seal GS-40, for industrial and institutional floor-care products
 - 7.6.2. Environmental Choice CCD-112, for digestion additives for cleaning and odor control
 - 7.6.3. Environmental Choice CCD-113, for drain or grease-trap additives
 - 7.6.4. Environmental Choice CCD-115, for odor-control additives
 - 7.6.5. Environmental Choice CCD-147, for hard-floor care
- 7.7. Disposable custodial paper products and trash bags meet the minimum requirements of one or more of the following programs for the applicable product category:
 - 7.7.1. U.S. EPA Comprehensive Procurement Guidelines for Janitorial Paper and Plastic Trash Can Liners
 - 7.7.2. Green Seal GS-09, for paper towels and napkins
 - 7.7.3. Green Seal GS- 01, for tissue paper
 - 7.7.4. Environmental Choice CCD-082, for toilet tissue
 - 7.7.5. Environmental Choice CCD-086, for hand towels
 - 7.7.6. Janitorial paper products derived from rapidly renewable resources or made from tree-free fibers.
- 7.8. Hand soaps meet one or more of the following standards:
 - 7.8.1. No antimicrobial agents (other than as a preservative) except where required by health codes and other regulations (i.e., food service and health care requirements)
 - 7.8.2. Green Seal GS-41, for industrial and institutional hand cleaners
 - 7.8.3. Environmental Choice CCD-104, for hand cleaners and hand soaps.
- 7.9. Containment and Treatment of Laboratory Chemicals
 - 7.9.1. College staff will properly label, store, track and dispose of all chemicals.
- 7.10. Indoor Pest Control and low or no volatile organic compound (VOC) paints and finishes
 - 7.10.1. Valencia College uses a contractor for spot treatment of indoor pests, on an as-needed basis. Least toxic materials are to be used.
 - 7.10.2. Valencia College uses only low or no volatile organic compound (VOC) paints and finishes.
 - 7.10.3. Use of deodorizers, chlorofluorocarbon (CFC)-containing products and aerosols in common areas and office spaces is discouraged.
 - 7.10.4. All new furniture purchased should be certified under one of the green certification programs and have low or no VOCs.
- 7.11. Entryway walk-off mats
 - 7.11.1. All entryways and entrances into Valencia College are equipped with walk-off mats. These systems shall be a minimum of 3' in length in the direction of travel.

- 7.11.2. The walk-off mats shall be cleaned on a weekly basis and thoroughly vacuumed onsite on a daily basis. The flooring beneath the mats shall be vacuumed and mopped on a daily basis as well.
 - 7.11.3. Secondary entrances shall also have walk-off mats of 3' in length to capture initial loose particles entering the building. These mats are vacuumed daily and the floor beneath them is vacuumed and mopped on a weekly basis.
- 7.12. Hand Hygiene
- 7.12.1. All restroom facilities, including those in public areas and back-of-house spaces shall include appropriate hand soaps.

Section 3

3.0 Usage of Environmentally Preferable Materials (includes Purchasing)

3.01. Procurement

- 3.01.1. All printed and photocopied documents related to the execution of bids and any resulting contracts must, whenever practical, use recycled paper, be double-sided and otherwise fully comply with the provisions of the College's Environmental Procurement policy.
- 3.01.2. The College encourages the use of submittal materials (i.e. paper, dividers, binders, brochures, etc.) that contain post-consumer recycled content and are readily recyclable. The College discourages the use of materials that cannot be readily recycled such as PVC (vinyl) binders, spiral bindings, and plastic or glossy covers or dividers. Bidders and/or Contractors are encouraged to print/copy on both sides of a single sheet of paper wherever applicable.
- 3.01.3. Valencia College raises staff awareness on environmental issues affecting procurement by providing relevant information and training.
- 3.01.4. Valencia College encourages contractors, bidders and suppliers to offer environmentally preferable products and services at a competitive price.
- 3.01.5. Valencia College encourages providers of services to consider environmental impacts of service delivery, including complying with all environmental legislative and regulatory requirements established by the State, the County and Municipality.
- 3.01.6. All desktop computers, notebooks, and monitors purchased must meet all Electronic Product Environmental Assessment Tool (EPEAT) environmental criteria designated as "gold" as contained in the IEEE 1680 Standard for the Environmental Assessment of personal Computer Products.
- 3.01.7. Copiers and printers purchased shall be compatible with the use of recycled content and remanufactured products.
- 3.01.8. All electrical products purchased by ASU shall meet the US EPA Energy Star certification when available and practicable. When products with Energy Star labels are not available, products that are in the upper 25 % of energy efficiency as designated by the Federal Energy Management Program shall be used.
- 3.01.9. Suppliers of electronic equipment, including but not limited to computers, monitors, printers, and copiers, shall be required to take back equipment for reuse or environmentally safe recycling when deemed appropriate by ASU.
- 3.01.10. When acquiring vehicles, the College shall purchase/lease less polluting alternatives to diesel, such as compressed natural gas, bio-based fuels, hybrids, electric batteries, and fuel cells, as available and suitable for the use intended.
- 3.01.11. When acquiring or replacing inefficient interior or exterior lighting, energy efficient equipment shall be purchased.
- 3.01.12. Purchase only the most water efficient appliances available. This includes, but is not limited to, high performance fixtures like toilets, low-flow faucets and aerators, and upgraded irrigation systems.
- 3.01.13. Cleaning solvents should be biodegradable, phosphate-free, and citrus-based when their use will not compromise quality of service.

- 3.01.14. Industrial and institutional cleaning products that meet Green Seal certification standards or environmental preferability and performance shall be purchased or required to be used by janitorial contractors.
- 3.01.15. All surfactants and detergents used shall be readily biodegradable and shall not contain phosphates.
- 3.01.16. Vacuum cleaners that meet the requirements of the Carpet and Rug Institute's "Green Label Testing Program-Vacuum Cleaner Criteria" (capable of capturing 96% of particulates measuring 0.3 microns and operating with a sound level less than 70dBA) shall be used by in-house staff and required for janitorial contractors.
- 3.01.17. Whenever possible, products and equipment should not contain lead or mercury. For products that contain lead or mercury, preference should be given to those products with lower quantities of these metals and to vendors with established lead and mercury recovery programs.
- 3.01.18. Pest control shall be managed through prevention-physical and mechanical-and through the purchase of environmentally friendly products. As a last resort, use of the least toxic pest control substance is required.
- 3.01.19. Bio-based plastic products that are biodegradable and compostable, such as bags, film, food and beverage containers, and cutlery, shall be acquired by the College and/or used by our contracted vendors.
- 3.01.20. Compostable plastic products purchased shall meet American Society for Testing and Materials (ASTM) standards as found in ASTM D6400-04. Biodegradable plastics used as coatings on paper and other compostable substrates shall meet ASTM D6868-03 standards.
- 3.01.21. Vehicle fuels made from non-wood, plant-based contents such as vegetable oils are encouraged.
- 3.01.22. Paper, paper products, and construction products made from non-wood, plant-based contents such as agricultural and residues are encouraged.
- 3.01.23. Ensure that all wood and wood contained within the products that ASU purchases is certified to be sustainably harvested by a comprehensive, performance-based certification system. The certification system shall include independent third-party audits, with standards equivalent to, or stricter than, those of the Forest Stewardship Council certification.
- 3.01.24. Purchase or use of previously used or salvaged wood and wood products are encouraged.
- 3.01.25. Thirty per cent postconsumer waste recycled paper for all applications shall be the standard when quality of service is not compromised nor the health and safety of employees prejudiced.
- 3.01.26. When specifying asphalt concrete, aggregate base or Portland cement concrete for road construction projects, recycled, reusable, or reground materials shall be used when practicable.
- 3.01.27. The use of reclaimed stone and brick and the use of secondary or recycled aggregates shall be specified.
- 3.01.28. Transportation products, including signs, cones, parking stops, delineators, channelizers, and barricades shall contain the highest postconsumer content practicable.
- 3.01.29. Products that are durable, long lasting, reusable, or refillable are preferred whenever feasible.
- 3.01.30. Packaging that is reusable, recyclable, or compostable is preferred, when suitable uses and programs exist, as is eliminating packaging or using the minimum amount necessary for product protection to the greatest extent practicable.

- 3.01.31. Green purchasing concepts shall be integrated into architectural designs, final construction documents, and the final construction of all College buildings and renovations of property or facilities owned by the College. All buildings and renovations undertaken by the College shall follow green building practices for design, construction, and operations, where appropriate, as described in the LEED Rating System.
- 3.01.32. When maintaining buildings, products such as paint, carpeting, adhesives, furniture and casework with the lowest amount of volatile organic compounds (VOC's), highest recycled content, and low or no formaldehyde shall be used when practicable.
- 3.01.33. All carpet distributors and/or manufacturers of carpet installed at the College shall have a carpet recycling plan that is approved by Purchasing and Business Services.
- 3.01.34. The use of chlorofluorocarbon and halon-containing refrigerants, solvents, and other products shall be phased out, and new purchases of heating/ventilating/air conditioning, refrigeration, insulation, and fire suppression systems shall not contain them.
- 3.01.35. All landscape renovations, construction, and maintenance performed by internal staff members or contractors providing landscaping services shall employ sustainable landscape management techniques for design, construction, and maintenance whenever possible. This includes, but is not limited to, integrated pest management, drip irrigation, composting, and use of mulch and compost that give preference to those produced from regional generated plant debris and/or food waste programs.
- 3.01.36. Landscape structures constructed of recycled content materials are encouraged. The amount of impervious surfaces in the landscape shall be limited, whenever practicable. Permeable substitutes, such as permeable asphalt or pavers, are encouraged for walkways, patios, and driveways.
- 3.01.37. Plants should be selected to minimize waste by choosing species that are appropriate to the microclimate. Native and drought-tolerant plants that require no minimal watering once established should be purchased.

Section 4

4.0 Water Consumption

4.01. Indoor Water Use Efficiency

- 4.01.1. Toilets: Dual-flush toilets and others using no more than 1.28 gallons per flush are to be installed. For new installations or retrofits, toilets labeled under the EPA's WaterSense program are to be chosen, if available.
- 4.01.2. Automatic flushing toilets have been chosen by the College to reduce maintenance. Mechanisms for regular maintenance of these toilets to avoid unnecessary flushing are in place.
- 4.01.3. Urinals using 0.125 gallon per flush are to be utilized. For new installations or retrofits WaterSense labeled urinals are to be selected.
- 4.01.4. Faucets: Faucets with aerators flowing at the rate of 0.5 gallons per minute or below are to be selected.

4.02. Rainwater Use

- 4.02.1. Where deemed economically feasible, cisterns will be installed for use of water in non-potable uses, which may include toilet-flushing and irrigation. Source of cooling tower makeup water may also be designed to include rainwater.

4.03. Process Water

- 4.03.1. For any process water using equipment, the most water-efficient models will be selected, referencing the EPA WaterSense program.

Section 5

5.0 Impacts on the Surrounding Site (Landscaping, Tree Campus, Wildlife Habitat)

5.01. Stormwater Management

- 5.01.1. Retention ponds and swales minimize storm water runoff from College properties. All new structures are developed in coordination with the permitting process of the St. Johns River Water Management District and/or South Florida Water Management District.
- 5.01.2. Florida Friendly Best Management Practices for Protection of Water Resources by the Green Industries are followed.
- 5.01.3. Maintenance and installation of new plant material around campuses
- 5.01.4. The Grounds Services Departments will select native plants, when available, to meet landscaping goals. Availability of native plants can be identified through the Association of Florida Native Nurseries www.afnn.org.
- 5.01.5. Plants will be chosen with mature sizes appropriate to the locations planted, and avoid overcrowding to prevent the spread of plant diseases and pests.
- 5.01.6. Fertilization will be on an as needed basis, for instance, if leaves look chlorotic. Plants requiring ongoing fertilization should be considered for replacement.

- 5.01.7. The Grounds Services Departments, where feasible, will reduce lawn areas by increasing xeriscaping with native plants and native ground covers. Bahia grass will be planted in preference to St. Augustine grass due to its drought-tolerance and low fertilization requirements.
- 5.01.8. The Grounds Services Departments will increase the number of native plant species at each campus location, in keeping with the commitment to wildlife habitat and developing our campuses as living laboratories. The Grounds Services Departments in partnership with the Office of Sustainability will review each campus Master Plan to assure it is consistent with native plant landscaping.
- 5.01.9. The Grounds Services Departments will not plant any species listed as a category I or II invasive exotic by the Florida Exotic Pest Plant Council (FLEPPC) (<http://www.fleppc.org>).
- 5.01.10. The Office of Sustainability will inventory plants on campus and work with Grounds Services Departments on removal and replacement of exotic species listed as category I by the FLEPPC. Assistance in plant identification and recommendations for removal can be secured from the Central Florida Cooperative Invasive Species Management Area (CISMA) <http://www.floridainvasives.org/Central/>.

5.02. Cultural Practices

- 5.02.1. The Grounds Services Department will fertilize sparingly using organic compost or low phosphate/ phosphate-free fertilizer. Guidelines of Orange County and the Florida Department of Environmental Protection (http://fyn.ifas.ufl.edu/fert_ordinances.html), will be followed as a minimum.
- 5.02.2. The Grounds Services Departments will evaluate the feasibility of composting plant clippings for use on campus.
- 5.02.3. The Grounds Services Departments will maintain a grass-free area around trees to avoid damage by weed eaters.
- 5.02.4. The Grounds Services Departments will avoid cypress mulches and mulches containing dyes or arsenic. Preferred mulches are locally renewable, for example, pine bark or pine straw. *Melaleuca* mulch, if available, is considered desirable.
- 5.02.5. The Grounds Services Departments will design, operate, and maintain irrigation systems to use water most efficiently (according to standards specified for new construction in ARCHITECTURE AND ENGINEERING GUIDELINES).
- 5.02.6. The Grounds Services Departments will utilize Integrated Pest Management to minimize the use of pesticides including insecticides, herbicides, and fungicides (see next section).
- 5.02.7. The College's policy is to protect existing trees when considering new construction. When native trees must be removed, two trees are to be planted in the same vicinity or elsewhere on campus.
- 5.02.8. The Grounds Services Departments will seek to increase the native tree canopy on all campuses.
- 5.02.9. The Tree Campus USA committee and Office of Sustainability will reapply for Tree Campus USA status annually, and work with Grounds to be sure trees are protected.

5.03. Integrated Pest Management

- 5.03.1. Cultural practices related to Integrated Pest Management include design choices, soil, mulches, and mowing or pruning practices, as follows:

1. Since a healthy sustainable landscape is dependent upon choosing the right plant for the site, the Grounds Services Departments strive to use disease resistant varieties and proven species whenever possible, emphasizing native plants.
2. Disease or pest-prone varieties are to be gradually removed and replaced with disease and insect resistant varieties.
3. Soil is amended to promote healthy vigorous plants. Compost that may be available from the local landfill should be considered, and the feasibility of making compost onsite also considered.
4. Mulches are used to suppress weeds, insulate the soil and retain moisture.
5. Turf is mowed at regular intervals at the proper height and fertilized according to Green Industries BMPs (Florida Friendly Best Management Practices for Protection of Water Resources).
6. Proper pruning is practiced on all trees and shrubs in accordance with the specifications outlined in the Valencia College Tree Care Plan.
7. Chemical controls are used only as a curative measure. There are some circumstances where using a minimum of chemicals in a preventative application is more effective than a greater quantity of chemicals when curatively applied.
8. Valencia College Grounds Services Departments will use the least toxic chemicals available to control particular pests.
9. Valencia College Grounds Services Departments follow an integrated pest management plan using the U.S. Environmental Protection Agency's four-tiered approach to integrated pest management as follows:
 - 9.1. Set action thresholds - Valencia College Grounds Services Departments will use a threshold of greater than 65% infestation prior to instituting chemical control.
 - 9.2. Monitoring - The Grounds Services Departments will monitor and identify pests on a routine basis.
 - 9.3. Prevention - IPM programs work to manage the crop, lawn, or indoor space to prevent pests from becoming a threat. The Design Choices and Cultural Practices described in these guidelines are Prevention measures.
 - 9.4. Control - The College uses mechanical control, such as trapping or weeding, and where chemical treatment seems to be the only resort, organic and biological controls are preferentially chosen.

Section 6

4.0 Wildlife Habitat

- 4.01. Valencia College Grounds Services Departments and Maintenance Departments, in conjunction with the Tree Campus USA committee, Sustainability Committee, and Office of Sustainability, will continue to protect and/or create wildlife habitat on institution-owned land. The Sustainability Committee and Office of Sustainability will work with faculty to utilize the campus as a living laboratory.