



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, VIRGINIA 23219 2000

**Gregory A. Whirley**  
Acting Commissioner

June 30, 2010

## MEMORANDUM

**TO:** District Administrators  
CO Division Administrators  
District Maintenance Engineers  
Assistant District Administrators- Business  
District and C.O. Facilities Managers

**FROM:** Greg Whirley  
Acting Commissioner

**SUBJECT:** Energy Usage Policies

Executive Orders 82/2009 and 48/2007 directed all executive branch agencies to reduce energy consumption and costs in state government operations. Executive Order 82 further directed that agency policies in support of Executive Order 82 be posted on the website. This document represents VDOT's policies toward meeting the requirements listed in Executive Order 82/2009.

Attachment A addresses energy and water usage for the agency.

Attachment B addresses the agency's waste reduction policy.

Attachment C addresses travel conservation and efficiency measures listed in Executive Order 82/2009 that are not a part of VDOT's existing travel policy.

These policies will be posted on the VDOT portal on July 1, 2010. Please encourage staff to actively participate in energy and environmental conservation activities.

Attachments

CC: Chiefs  
Linda Cheatham  
Randy Campbell  
Barry Briere

## Attachment A

### Energy-Efficiency Improvements for Facilities -- Guidelines

While operating within your facilities budget, pursue the following energy-efficiency improvements.

- Incandescent lighting in the office setting shall be avoided and may be replaced with a fluorescent bulb. Replace old fluorescent fixtures and/or lights with high-output low-wattage units. Ensure that lighting levels are maintained at the levels listed in the Illuminating Engineering Handbook.
- Continue to implement VDOT's overall energy conservation policies, established some years ago, that provide direction for energy-efficiency improvements:
  - Upgrade old HVAC systems and/or controls
  - Replace single pane window units with more efficient multipane units
  - Replace exit sign lights with LED lights
  - Place security covers over thermostats
  - Provide thermal insulation above ceilings and on piping where needed
  - Provide motion detectors on all bathroom, hallway and office lights
- Aggressively pursue all energy-savings activities whose costs are recoverable in one fiscal year; other funded capital energy-savings improvements; and funded renovations of existing buildings consistent with LEED or Energy Star requirements.
- Prioritize maintenance activities that will yield energy conservation, especially those that will provide a payback with expected savings in energy costs within a one-year period.
- Prioritize as follows:
  - First priority: Energy-efficiency improvements that address the building structure itself
    - Simple and inexpensive improvements include caulking; installing door sweeps; and other such measures that will decrease the leakage of heated and cooled air from our buildings.
    - By addressing the building structure, we put ourselves in position to reap all the cost savings that we would expect from subsequent improvements in HVAC system, from changes to temperature settings, etc.
  - Second priority: HVAC and lighting improvements
    - Heating, cooling and lighting account for a large percentage of the electricity used in office buildings.
    - Use fans where available and when their use in the room or area will increase comfort levels of occupants and delay or reduce the need for heating or air conditioning.

- Third priority: Other energy-efficiency improvements, such as measures to increase energy-efficiency of hot water heaters

### **Specific Considerations**

- Place security covers over thermostats as needed
- Insulate or shield windows
- Add building insulation as needed
- Modify controls and ductwork to provide more flexibility in unoccupied areas.
- Replace incandescents with high-efficiency compact fluorescent lamps
- Check insulation of tanks and pipes
  - Install an insulation blanket on water heaters (electric only) seven years of age or older
  - Insulate the first 3 ft. of the heated water “out” pipe on both old and new units.
- Insulate steam and hot water lines.
- Install dampers in exhaust ducts.
- Insulate all ducts and pipes (hot and cold).
- Install timers to turn lights on and off at preset intervals, or photosensitive units that react to changes in natural light.; install automatic controls on exterior, safety and security lights
- Add switches to give you control over different areas of the buildings.
- Lower ceiling fixtures to bring light sources closer to work areas. You may be able to remove lamps or use lower wattage bulbs as well.
- Install task lighting that brings illumination to the job, especially for activities that require high light levels, like writing, drafting and certain repair work.
- Identify equipment that may be negatively affecting energy conservation measures due to location or inefficiencies; address issues (e.g. perform equipment maintenance; overhaul or replace; relocate)

### **Think “Outside the Box”**

Think “outside the box” for other energy-saving solutions.

For example, some years ago an energy audit included a recommendation to entirely avoid the expense of heating an energy-inefficient paint shed. Instead of suggesting energy-saving improvements to the paint shed structure, the recommendation was to reduce paint inventory to just what was needed during the winter months (a slow season) and to store that lower volume of paint inventory in a different building that was already being heated and had adequate space for this lower level of paint inventory.

Think about what your district can do differently to achieve energy savings.

## **Monitoring Energy Conservation Practices**

The District Facilities Manager needs to monitor compliance throughout the district with the energy-conserving measures listed immediately below.

### Energy-Conserving Measures

- Thermostat settings -- 68°F for winter; 78°F for summer
  - Set back for nights and weekends where feasible
- Ventilation ducts and grills shall not be obstructed
- Turn off exterior, safety and security lights in morning
- Turn off lights whenever possible

### Employees are encouraged to do the following:

- Turn off lights and other equipment when not in use.
- Lighting:
  - Turn off lights when leaving the work area, conference room, restrooms. Turn off lighting in individual offices if the office is to be unoccupied for longer than ten minutes or more and at the end of the day.
  - Turn down lighting levels where possible. Adjust lighting to actual needs. Use free "daylighting." To prevent glare, eyestrain, and headaches, do not "over-light."
- Computers and peripherals:
  - Use the ENERGY STAR power management settings on computer and monitor so they go into power save mode when not in use.
  - Leave computers on at the end of the day; however, log off the network, and turn off monitor.
- Keep air vents clear of paper, files, and office supplies.
- Keep windows and exterior doors closed when the heating and air conditioning system is running.
- Conserve energy whenever possible.
- Conserve water where possible. Report dripping faucets, showers, and continuously running or leaking fixtures to the facilities manager. Turn off all unnecessary flows.
- Share observations and ideas for improving energy efficiency with the facilities manager.

## **Building Maintenance -- Guidelines for a Seasonal Checklist**

If you have a process in place to check buildings for energy-efficiency improvements and repairs prior to the heating and cooling seasons, move forward with that process. However, augment your process as needed to comply with the requirements below.

You may use a pre-existing building maintenance checklist or develop one of your own. A number of checklists are available on the Facilities Managers' Team Site for your reference. A copy of the checklist that you use should be included as an attachment to the required report.

Be sure that the checklist you use includes, at a minimum, all the items listed below.

### **Checklist Items**

#### **The Buildings**

- Seal cracks
- Replace broken glass
- Adjust automatic door closers
- Cover window air conditioners (applies to heating season)
- Tighten window and door frames
- Check weather-stripping
- Fix broken doors and windows
- Insulate or shield windows
- Add building insulation as needed
- Check windows and doors for units that may need to be replaced or modified

#### **Heating, Air Conditioning, and Ventilation**

- Evaluate the need for heating and air conditioning in unoccupied areas; provide according to need
- Check thermostat settings (68°F for winter; 78°F for summer)
  - Set back for nights and weekends where feasible
- Check thermostats for accuracy
- Fix, adjust or install new controls
- Ensure preventative maintenance for the HVAC system is performed on schedule
- Inspect ducts
- Adjust air duct registers
- Clean air filters
- Check pipes for adequate insulation
- Check radiators; clean on regular basis
- Limit exhaust fan use
- Make use of outside air

- Add window coverings
- Reduce ventilation by adjusting dampers, changing control settings or fan speed, while still complying with minimum ventilation guidelines for local building codes
- Clean the fins, tubes and coils of air conditioners or heat pumps
- Shut off unneeded boilers.
- Check boiler insulation.
- Repair cracks in boiler walls.
- Change fan speeds or belt drives in an air-handling system.
- Turn off pumps in hot water heating systems during mild weather.
- Inspect the valves, dampers, linkages and motors of your equipment.
- Maintain steam traps and vents in two-pipe steam heating units.
- For the winter, vent machine-generated heat inside into the heated environment (reverse in summer -- vent heat outside rather than into air-conditioned environment)

#### **Lighting**

- Turn off lights whenever possible
- Reduce lighting where it isn't necessary
- Disconnect or replace ballasts
- Clean lamps and fixtures
- Replace yellowed or hazy lenses, diffusers and globes (acrylic recommended)
- Check timers
- Keep exterior light timers adjusted to changing day lengths

#### **Hot Water**

- Set water temperature for hand washing purposes to 105°F
- Check the accuracy of the water tank's temperature gauge
- Fix leaks
- Cut off circulation pumps, as appropriate
- Drain heater sediment

#### **Equipment**

- Perform maintenance on all electrical equipment per schedule

## Attachment B

### **Waste Reduction**

#### **Scope:**

To provide a cost effective and environmentally sound way of managing waste by reducing the amount of waste generated, maximizing the life of products by reusing whenever possible, recycling when possible, only disposing what is necessary, and buying recycled products.

VDOT is committed to the practices of this policy in the day to day operations of the agency.

#### **Responsibility:**

It shall be the responsibility of each VDOT employee to actively participate in recycling and waste reduction activities to reduce the amount of waste generated.

#### **Waste Reduction Practices:**

- Reduce consumption of paper & office supplies.
- Purchase only the quantity of supplies needed, especially letterhead, envelopes, forms and business cards.
- Use e-mail to send memos, documents, announcements, etc. instead of paper documents.
- Make double sided copies when possible.
- Reuse the clean side of waste paper for drafts and notes.
- Store files on computer disks instead of paper files.
- Eliminate unnecessary forms, reports and publications.
- Post announcements on bulletin boards or send via e-mail instead of sending individual copies.
- Purchase products that can be reused instead of those designed for one-time use.
- Purchase durable products and service agreements when applicable.
- Avoid the use of disposable containers, plates or cups. If disposable foodservice items are needed, choose those that are made from recycled contents.
- Reduce use of disposable supplies.
- Avoid the use of foamed polystyrene containers, plates or cups.
- Use reusable cups or mugs instead of disposable cups.
- Don't procure water in individual serving containers made of plastic.
- Work with vendors, bidders, etc. to ship materials and responses in, reusable, returnable, or recyclable packages.
- Recycle white paper, batteries, and print cartridges.
- Recycle oil and antifreeze.

## Attachment C

### Travel

**Scope:**

To provide environmentally sound policies for official travel.

VDOT is committed to the practices of this policy in the day to day operations of the agency.

**Responsibility:**

It shall be the responsibility of each VDOT employee to actively participate in travel conservation and efficiency practices when traveling on official business.

**Travel Practices:**

- Carpooling to meetings is encouraged when attended by multiple staff.
- Use video conferencing or conference calls in lieu of in-person meetings when possible.
- In planning travel to meetings or conferences, first preference should be given to use of state-owned vehicles.
- If the District/Division administrator or designee certifies that a state-owned/OFMS rental vehicle is not available or the use of a personal vehicle is determined to be cost-beneficial to VDOT, an employee shall be reimbursed at an amount equal to the most recent business standard mileage rate as established by the internal revenue service (\$.50 cents per mile as of January 1, 2010).
- If a state owned vehicle is available or the District/Division Administrator or designee does not certify the personal automobile is cost beneficial to VDOT, an employee shall be reimburse at an amount equal to the lowest trip pool charged by the Department of General Services, Office of Fleet Management Services (\$.246 cents per mile is the current rate).
- Purchase alternative fuels when available if the vehicle being used accepts it.