

## ADDENDUM

### Responses of the Office of Environmental and Energy Coordination (OEEC) to Questions of the Energy Subcommittee of the Joint Environmental Task Force

#### **What has the county done for energy efficiency so far? (specifics on air tightness, insulation, energy audits, LED lights, etc.)**

The county has undertaken energy efficiency initiatives pursuant to both internal department guidelines and the county's [Operational Energy Strategy](#) (OES), which the Board adopted in July 2019.

The OES is a 10-year strategy intended to promote cost-effective, energy-efficient innovative technologies and an energy-conscious culture that encourages strategic decisions with regard to energy consumption. The OES provides goals, targets and actions in 10 Focus Areas, including Energy Use and Efficiency. The Board of Supervisors began funding OES energy efficiency projects in 2019. These funded projects included facility energy improvements and retrofits as well as the installation of charging infrastructure for electric vehicles and a multi-year effort to transition the county's streetlights to LED technology. Appendix III of [Fairfax County Sustainability Initiatives](#) lists specific FY 2019 OES energy efficiency projects at county and FCPA facilities and provides annual electric savings and equivalent carbon emissions avoidance for each.

Section 4 of *Fairfax County Sustainability Initiatives* highlights several of the energy efficiency and conservation initiatives that county departments and agencies have undertaken for years, even before adoption of the OES. Section 5 describes individual projects funded by the county's Environmental Improvement Program (EIP), several of which promote energy efficiency, including a web-based irrigation control project and a community LED lightbulb exchange program.

Examples of energy efficiency initiatives and actions implemented by county departments and agencies include:

- *Building envelope*: The building envelope is the physical barrier between the exterior and interior environments enclosing a structure and protects the interior space from the effects of the environment, like precipitation, wind, temperature, wind, and humidity. Weatherization measures, such as the use of caulking and window sealant, reduce the infiltration of outside air into a building.
- *Building energy management system (BEMS)*: A BEMS monitors and controls electrical and mechanical equipment, such as lighting and power systems. A BEMS allows for evaluation of facility energy usage and identification of energy savings opportunities.
- *Computer server virtualization and consolidation*: Consolidating server hardware for more effective usage reduces the needed number of computer servers, thereby reducing data center footprints, cooling demands and power consumption.
- *Energy recovery systems*: Energy recovery systems pre-treat incoming fresh air with outgoing exhaust air so that less energy is needed to bring the incoming air up to indoor conditions.
- *HVAC system right sizing*: Selecting the correct size for heating, ventilation and air conditioning (HVAC) systems decreases the energy required to run units. Short cycling occurs when overly large units turn on and off too quickly. On the other hand, undersized systems are constantly running to maintain the desired temperature, which wastes energy.

- *LED lighting*: Indoor and outdoor LED lighting retrofits significantly decrease energy usage and lengthen the lifespan of lighting systems.
- *Lighting control systems*: Energy usage is decreased by regulating light via different types of control systems. Motion control fixtures adjust lighting based on occupancy, while daylight harvesting sensors adjust indoor lighting levels based on available sunlight. Fully integrated lighting controls system can be controlled via software that allows schedules to be set and system settings to be adjusted remotely.
- *Personal computer (PC) power management*: PC power management programs automatically shut down computers during pre-scheduled hours (e.g., after the close of the business day) or other periods.
- *Real-time metering*: The use of real-time metering results in rapid, informed energy management decision-making.
- *Roofs*: The replacement of aging roofs with energy-efficient roofing products allows increased reflection of solar radiation, which lowers the amount of heat transferred from the roof to a building, thereby reducing its HVAC load.
- *Variable Frequency Drive (VFD)*: VFDs are installed on pool pumps and HVAC systems to control the speed of the motors in response to system demand, thereby allow for more efficient operation.
- *Water reuse*: Fairfax County's Water Reuse Program delivers clean but non-potable water from the Noman M. Cole Jr. Pollution Control Plant to non-residential customers for irrigation and industrial purposes. Using reclaimed water saves the energy that would have been needed to treat that water.