PWC Sustainability Commission: Proposed Data Center Proffers

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Data centers are the most rapidly growing industry in Prince William County. Due to their high demand for energy and water, among other factors, their construction and operations pose significant risks to the County's ability to achieve its climate mitigation and resilience goals (Res No 20-773 Climate Mitigation and Resiliency Goals.pdf). The following proffers (or conditions) would reduce these risks if adopted consistently.

The actions fit into the following categories: energy supply; water resource management; green buildings (including energy and resource efficiency); air quality; and decommissioning. Note that some actions span several categories.

Energy Supply

1. Proffer clean energy procurement (90% renewable by 2028). Encourage use of renewable energy certificates or direct procurement (Reference SB1196 energy efficiency and clean electricity standards).

Water Resource Management

1. Regular sampling and testing of data center runoff affecting local drinking water quality or pollution of local streams, ponds, lakes, and other surface water should be required with an annually updated plan to accomplish this to include levels of salinity, cleaning chemicals, lubricants, and heavy metals.

2. A plan for responding to accidental chemical spills such as diesel fuel from generators should be required prior to site plan detailing measures that will be taken to protect the surrounding community, environment, and natural resources. Secondary containment for all chemical storage and use locations should be proffered.

3. Treating onsite to improve quality of wastewater discharge should be considered for proffer. Wastewater released to UOSA should meet SDWS primary and secondary for salt and chemical contaminants which USOA cannot remove.

4. Proffer regular reporting on water use and discharge.

Green Building/ Energy and Resource Efficiency

1. Proffer to use best practices for energy use and efficiency.

2. Applicant will evaluate trade-offs between water and energy use for server cooling systems using life-cycle assessment and formulate proffers that provide both the least water usage and the lowest CO2 emissions possible.
If closed loop cooling towers are used, a maximum power use effectiveness (PUE, or total facility electricity use divided by electricity use for computing equipment) of 1.5 is recommended. Otherwise, a PUE of 1.2 (or equal to the top 15% of the most efficient data centers) is recommended.

3. Proffer to use sustainable building materials.

4. Provide proffered management plan for buffer zones, including planting of natives and management of invasive plants.

5. Proffer to recycle construction waste.

Air Quality

1. Applicants should proffer to ensure that all emergency power generators will be operated in compliance with Virginia Department of Environmental Quality Tier 4 standards and regulations. Use of natural gas should be explored. On-site diesel or natural gas generators should only be used in emergency situations, not to bridge the gap until the facility is connected to the grid. Emergency power usage should be defined as unexpected natural or weather disasters, causing an electrical shortage for a limited time, not because the local power grid has yet to permanently deliver power to the data center's substations.

Decommissioning

1. The following decommissioning standards should be considered to be proffered, and a viable decommissioning plan required prior to rezoning unless the operator has a viable re-use plan for the facility in place:

a. The owner of a non-operational data center should remove from the site all hazardous materials, generators, and other mechanical equipment, pursuant to Federal, state, and local standards for removal and disposal.

b. The owner of a nonoperational data center should either (a), disassemble or deconstruct the data center building and accessory structures within a reasonable time after ceasing operations; or (b), should enter into a contract or other legal arrangement for alternative use of the structure(s). Full site remediation should be required if the applicable structures are demolished.

c. In the case of disassembly or deconstruction of the building and accessory structures, any man-made components below ground should be removed, including foundations, footers, poles, wires, and conduits.

d. Adequate security should be proffered to ensure that financial resources are available for decommissioning. Cash escrow from the data center owner should be estimated and established based on a decommissioning financial estimate to be submitted to, and approved by, the local government finance office prior to issuance of the final occupancy permit.

e. Proffer to remove all fencing and exterior lighting at completion of decommissioning.