

DATA CENTER SETBACKS FOR WILDLIFE HABITAT

ISSUE PAPER: Data Center Setbacks for Wildlife Habitat, Farms, and Forested Lands

Prepared for: New Kent County Citizens

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Subject: Data Center Setbacks to Accommodate Wildlife in Rural, Agricultural and Forested Landscapes

Issue Statement

Large data center campuses (500+ acres) convert habitat, generate continuous low-frequency noise and light, and can displace wildlife onto adjacent working farms and vineyards. New Kent's rural character, row-crop farms, vineyards, and forested lands require the strongest feasible setbacks to minimize these effects. This paper identifies the most protective setback distances found in current ordinances, model codes, and adopted standards, and notes where they have been imposed or proposed.

Most Protective Setback Standards

The strongest standards treat agricultural districts, residential uses, sensitive receptors, and (by extension) forested or wildlife habitat edges as requiring substantially greater separation than ordinary industrial setbacks.

Leading model and protective standards:

- **Kentucky Resources Council (KRC) Model Data Center Zoning Ordinance** (widely circulated protective model): – At least **1,500 feet** from a Sensitive Use or the boundary of any Residential, Commercial, or **Agricultural District**. – At least **500 feet** from all outer perimeter property lines (general). – Emission points or exhaust stacks: **1,000 feet** from any adjacent property boundary and **2,000 feet** from Sensitive Uses or Residential/Commercial/Agricultural District boundaries. Greater distances may be required to meet noise limits. Reductions (up to 50%) allowed only with written adjacent-owner consent plus buffering that still meets noise standards.
- Similar language appears in drafts such as Shelby County, Indiana (1,300 feet from Sensitive Use or Residential Zoning District; comparable stack distances).

Adopted or strongly protective local examples:

- **Tucson, Arizona** (adopted): Large-scale data centers must be at least a **half-mile (2,640 feet)** from residential neighborhoods and at least **1,000 feet** from commercial/office buildings and natural areas, riparian corridors, or open space (zoning administrator may require half-mile from natural areas based on environmental review).
- **Stafford County, Virginia** (adopted October 2025): Primary structures **750 feet** from property lines abutting or across from residential uses, schools, or the Rappahannock/Potomac Rivers (increased from the prior 100 feet; described as among the strongest in Virginia). Accessory structures, parking, substations, etc., **300 feet** from residential lines. Vegetative buffers increased to 200 feet.
- **Limerick Township, Pennsylvania** (updated): **1,000-foot** setback from residential uses (reducible to 500 feet only with demonstration that sound will not reach the home). Residents advocated for 1,500 feet.
- **Osage Beach, Missouri** (proposed): **1,000 feet** from any residence, residentially zoned property, churches, schools, or daycares.
- **Fayette County / Lexington, Kentucky** drafts: **1,000 feet** (with later proposals elevating some sensitive-use distances toward 1,500 feet) from residential or agricultural zones outside the urban service boundary, schools, and daycares; major centers prohibited or heavily restricted in agricultural zones.
- Other strong standards include Cass County, Missouri (**1,000 feet** from subject property line) and various Georgia counties (e.g., 1,000 feet from existing residences).

More common baselines remain lower (200–500 feet for buildings, 300 feet for equipment when abutting residential or agricultural land), as seen in Fairfax County, Virginia, and many planning guides. The most protective figures above deliberately address noise propagation, wildlife avoidance, and agricultural conflict.

Relevance to Wildlife, Farms, and Forested Lands

Noise from cooling systems and generators can remain disruptive well beyond 1,000–1,500 feet in open rural terrain. Wider setbacks reduce the zone of avoidance that drives wildlife onto remaining habitat and working farmland/vineyards. When combined with dense native vegetated buffers (200–500+ feet within the setback), retained woodland, and acoustic enclosures, these distances better preserve residual corridors and limit secondary agricultural damage. Emission/stack setbacks of 1,000–2,000 feet further protect air quality and sensitive edges.

Recommendations for New Kent County

To achieve the highest practical protection for indigenous wildlife, active farms, vineyards, and inhabited forest lands:

- Adopt a minimum **1,500-foot** setback for principal structures and major equipment from the property lines of active agricultural land, vineyards, and significant forested/wildlife habitat (mirroring the KRC model treatment of Agricultural Districts and Sensitive Uses).
- Require **1,000–2,000 feet** for generators, stacks, and primary noise sources from the same edges.

- Include a substantial native multi-layered vegetated buffer (minimum 200–500 feet) within the setback, with retained woodland where present.
- Authorize the approving body to increase distances based on site-specific acoustic and biological modeling.
- Make these standards mandatory conditions of any Conditional Use Permit, with no automatic reduction except by written adjacent-owner consent plus demonstrated noise compliance.

These distances represent the upper tier of currently documented protective standards. Pairing them with ambient-relative or absolute noise limits, dark-sky lighting, pre- and post-construction wildlife surveys, and monitoring will give New Kent the strongest available tools to defend its rural agricultural and ecological character.